

**YOUTH
GOES TO
WAR**

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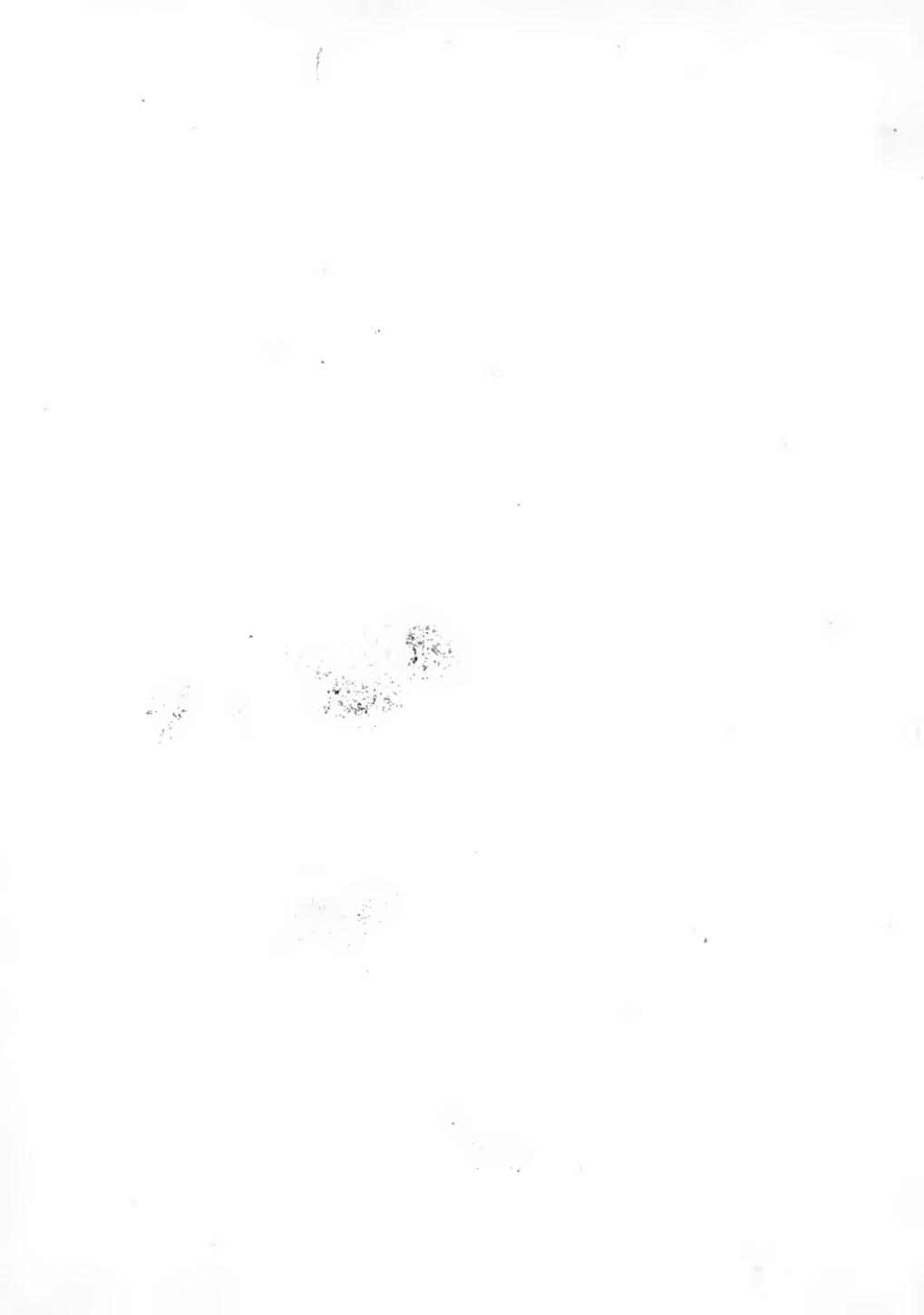
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Victory Corps

There must be an all-out effort on the education front. Let us be realistic. Every able-bodied boy is destined at the appointed age for the armed services. The tempo of war is such that a complex college education is impossible. Those able to go to college must devote this time to training for the specialized work which the services demand. Those who do not or cannot go to college must begin now, whether they're in school or out of school, to prepare themselves for the tasks which are for them inevitable and unavoidable.— Lieutenant General Breton B. Somervell, Commanding General, Army Service Forces, United States War Department

YOUTH GOES TO WAR

by Lyle M. Spencer and Robert K. Burns,
Directors, SCIENCE RESEARCH ASSOCIATES, with the Assistance of Louis W. Sidran. Published by SCIENCE RESEARCH ASSOCIATES, Chicago and Atlanta, 1943

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In preparing "Youth Goes to War," the authors drew heavily on numerous government and private sources. The following proved especially helpful: the various recruiting and press relations staffs of the Army, Navy, Marine Corps, and Coast Guard; the War Manpower Commission; the United States Employment Service; the United States Civil Service Commission; the Office of War Information; the Women's Bureau of the Department of Labor; the American Council on Education. The job descriptions were adapted from material supplied by the War Department (for Army jobs) and the Navy Department (for Navy jobs). Civilian job definitions were adapted from the "Dictionary of Occupational Titles" (assembled by the United States Department of Labor and the United States Employment Service), and from definitions supplied by the War Manpower Commission.

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A NOTE TO THE READER

This is every American's war.

It will not be won easily. It will not be won through the efforts of a few. It will be won only through the efforts of all Americans working together intelligently, harmoniously, and *hard*.

The lack of manpower threatens to become our worst bottleneck of the war, and that bottleneck will not be smashed unless free American workers dedicate all their efforts to fighting and producing for victory. In no other way can enough workers be fed to our short-handed factories and fields, or soldiers to the far-flung fighting fronts.

In this victory effort, the schools have a solemn and all-important responsibility: to prepare their students, who make up one of our most important manpower reserves, for the right war job in the right place at the right time.

Despite the conflicting advice and confusing rumors now rife in educational circles, the following confirmed facts stand out:

1. Supplying trained man- and woman-power to replace workers who have gone to war is clearly the most important wartime function of America's schools. They will be expected to supply at least *one million* trained men to the armed services *each year as long as the war lasts*; more than *a million and a half* workers, mostly women, to essential war and civilian industries; and *two million boys and girls* for part-time, after-school, and vacation labor!

2. Since the passage of the 'teen-age draft bill, no boy can plan to do more than complete his current semester of work after he reaches eighteen, unless he is training directly for one of the highly technical war occupations. Terminal education must wait until *after* the war. This applies in a limited sense also to girls.

3. Young people in high school must be trained *specifically* to become *better warriors and war workers*. While in high school, the student's job is to prepare himself to assume adult responsibilities when called to active service, whether in a Flying Fortress or a factory.

4. There are *twenty major subjects* which high schools can teach to help prepare their students directly for war jobs. These subjects provide direct training for more than one thousand military and

civilian occupations in which there is either a shortage of workers now or a shortage is expected soon. About two-fifths of these occupations should provide good job opportunities for young people in the postwar world.

5. In ordinary times, not quite half of all the girls go out to find a job for at least a short time after they leave school. While the war lasts, *every* girl must be taught that it is her *patriotic duty* to work at some essential job. America's critical manpower shortage *cannot be solved* unless this is done.

6. Each young person *must* make a tentative war job selection while he is still in high school and start preparing for it. If he does not, the selection will be made for him arbitrarily by the inevitable trend of war events.

The War Department has already made it plain to every high-school student that he should regard himself as in the reserves. Young people everywhere recognize that they are "destined for the services" as soon as their schooling is finished. The question, "What can I do to help?" is uppermost in their minds today.

Youth Goes to War was written to provide the basic information young people need to answer that question intelligently for themselves.*

The reader is asked to note carefully the descriptions, beginning on page 190, of 383 war-service jobs. This list includes those military and civilian jobs which young people can do well to fit themselves for and in which there are definite shortages of workers today.

Teachers may secure from Science Research Associates a free mimeographed teachers' guide outlining methods of presenting the material in *Youth Goes to War* and giving suggested student activities. Furthermore, it is suggested that the Science Research Associates publication, *A Wartime Guidance Program for Your School*, will be especially useful as a guide to the practical techniques teachers and counselors can employ in meeting their wartime responsibilities to their students.

* The timeliness of the information in *Youth Goes to War* is essential to the success of its classroom use. Teachers are urged to keep that information up to date by checking it against any changes of the moment, which they will find listed in the latest issues of the monthly magazine *Vocational Trends*.



N. Y. A. Photo

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PART ONE

VICTORY

IS YOUR

PROBLEM

1. THE KIND OF WAR THIS IS

The People's War

WE HAVE a frightening war on our hands. We are coming gradually to realize that it is a bitter war, a hard war, a war which we can still lose, even though the ideals we fight to preserve are just.

It is a war which we *must* win. We can make no plans, build no hopes, create no satisfying careers for ourselves until the slave states and the enslaved states that menace us are completely crushed.

This is a people's war in the most complete sense of the term. No longer, as in ancient times, can citizens stand aside and watch the professional soldiers fight it out. The lives of all free men and women hang in the balance. This war has touched the destinies of every one of us.

There is no one front to this world conflict. Most of the earth's two billion people are now locked in the bloodiest, cruellest war of all time. The islands of paradise are trampled battlegrounds. The steppes of Russia are overrun with clanking armored monsters. The towering mountain passes of the Himalayas are targets for bombs. The very seas are highways of tragedy.

We must win this war, of course. Our hearts tell us we *will* win. But our minds tell us that we will not win easily. We will have to win against huge odds at terrible cost. And after we have won, we will still have to fight the social cankers that the war will leave behind. Sad experience has shown us again and again that when these old war cankers are left to fester, they soon spread the poison of new wars. We must find cures for these cankers, because our democratic civilization cannot afford much longer the terrible luxury of a world war every generation.

What the War Is About

When did this war start? According to the calendar it began on September 1, 1939, when Hitler's armored panzers plunged across the Polish frontier. But when did it really start? In 1937? In 1935?

World War II started at least as far back as 1931 when the Mikado's Nipponese legions first attacked the peaceful Chinese. Manchuria, Ethiopia, Spain—these were the trial battlefields of a war that flared and burned for years before the unwary democracies

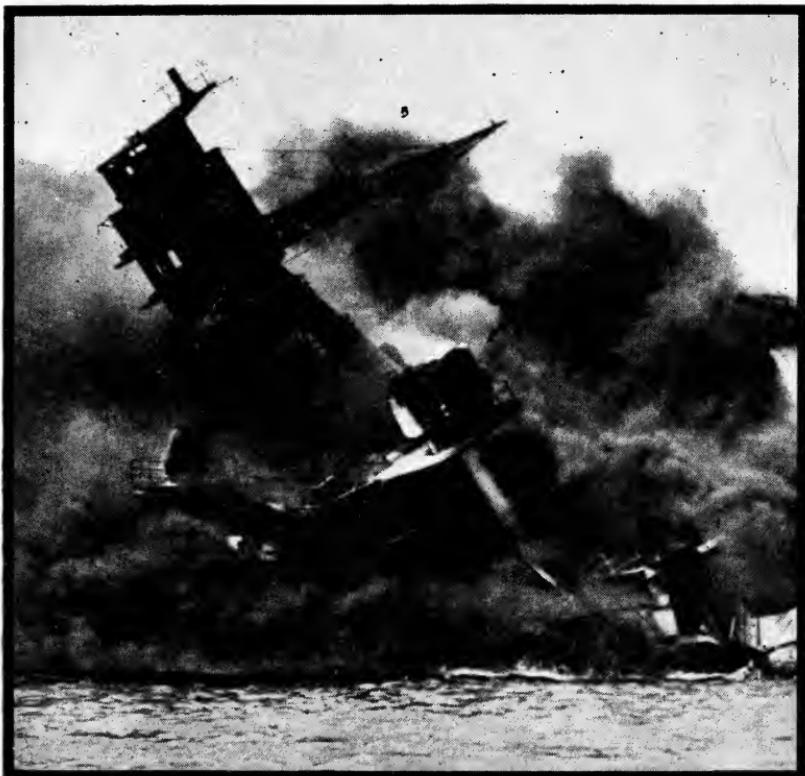


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The Japanese attack on Pearl Harbor, December 7, 1941, cost us the battleship Arizona, shown in flames, and marked our active entry into the war

were drawn in. The Axis nations—Japan, Germany, and Italy—used these battlefields as practice grounds on which they trained their armies for the final job of defeating the more powerful United Nations—England, Russia, China, the United States.

Some people say that World War II started as far back as 1919 when the Versailles Treaty of World War I was framed. Others say that it had its roots in the failure of the League of Nations to enforce its rules for peace—and point out that the League failed because many people tried to isolate themselves from the rest of the world and would not co-operate in the cause of peace.

And some say that World War II is only a part of another, greater war which the common people of the earth have been fighting since the beginning of man. This struggle of the common people for a free way of life was given more complete expression than ever before when our own Federal Union was born more than a century and a half ago. The ideals of this way of life are embodied in the American Bill of Rights, with its guarantees of freedom of speech, religion, and assembly to all peoples, regardless of race, color, or creed.

From time to time the Nazis and Fascists of the past (they have had many different names, of course) arose to overthrow the fundamental freedoms which free men cherish. Always, however, they were beaten back. Now Hitler's Nazis, Mussolini's Fascists, and Hirohito's militarists have once again taken up the deadly work of trying to destroy those fundamental freedoms. Like their bloody brothers of the past, they too will be beaten back and destroyed. As Vice President Henry A. Wallace has put it, "The people are on the march toward even fuller freedom than the most fortunate peoples of the earth have hitherto enjoyed. No Nazi counter-revolution will stop it."

World War II, then, is not a single, separated conflict. It is only the latest phase of the "people's revolution," the people's fight for freedom of religion, freedom of expression, freedom from want, and freedom from fear. As Americans, we won these freedoms many years ago. Now we must fight another war to keep them. We common people *must* win this part of the conflict, as the common people have always rallied and won before.

Winning Will Be Difficult

Though the early odds in this war may be against us, we will not be stopped. The Nazi schools have drilled their goose-stepping German youth long and hard in preparation for this war. The Fascist groups of Italian boys have grown into black-shirted warriors, trained by Mussolini with but one object in mind—to destroy us. And the treacherous rulers of Japan plotted long for the chance to deliver the smashing sneak blow at Pearl Harbor.

Long Axis preparation for war stacked the odds against us, for in most of the United Nations—in the United States particularly—we have not fostered militarism. We have thought of our armed

forces as unfortunate necessities. True, we have rallied in every previous war and won. But between wars we have always starved our fighting forces, begrudging them every dollar, every man, and every ship.

The result has been that we have never been properly prepared for wars when they came, and we always have had to take a nasty beating in their early stages.

Serious war emergencies have arisen four times before in the history of our country. To meet these emergencies we have had the task of organizing and equipping an armed force in haste and often confusion. In 1775 we had no armed forces, because we had no government; we were not even a nation. In 1812 our forces were pitifully weak. Our navy, for example, consisted of but eighteen small ships to be pitted against the mighty English fleet many hundreds strong. In 1861 we had an army of about ten thousand men, and that army was split by the issues of the Civil War. The northern army had to be increased literally a hundredfold before it secured a victory. In 1917 our small armed forces had to be swelled greatly in size and strength by a quickly organized program of conscription and industrial activity. The early successes of the Japanese in the Philippines, Guam, and Wake Island demonstrated bloodily that we were not fully prepared for this war.

The Cost of Unpreparedness

The lack of training among our soldiers and sailors led to tragic defeats in the early battles of four of our wars. In 1775 General Washington was forced into retreat after retreat. Our national capital was captured and burned in the War of 1812. The slaughter and flight of the Army of the Potomac at the battle of Bull Run in the Civil War will never be forgotten. In 1917 our allies were able to hold the line until, more than a year after we declared war, American troops in large numbers finally were trained and ready to enter the fighting. In each of these wars unpreparedness cost us dearly in blood and wealth.

While we were forced into this war when only half armed, we entered it in far better shape than in any previous war. The President—our commander-in-chief—foresaw our danger and began years ago to build up our fighting forces. In the fall of 1940 he urged upon Congress the passage of the Selective Service Act which gave



The Bettmann Archive

This soldier of the Revolutionary war represents the Spirit of '76 which inspired George Washington's men when they struck the first blow for freedom

us, for the first time, a way of building a real army in time of peace. By December 7, 1941, we had more than two years of defense and war production behind us. We had a splendid Navy, and our Marine Corps showed its skill and heroism at the very outset in the stand of its units at Wake Island.

Though we entered this war stronger than at the start of any previous war, *our enemies also were stronger*. The German and Japanese nations glorified the trades of war for many years before we woke

up to their sinister purpose. The Axis governments had been fighting wars here and there across the world ever since 1931. Their armies were large and well trained, led by veterans of many battles. Their civilians had long been organized and enslaved for the single purpose of increasing the production of war materials for their armed forces. Finally, in Nazi Germany there was the greatest development of the *science* of war that the world has ever seen. These were the Axis advantages when the first bombs crunched down upon our battleships at Pearl Harbor.

The Advantages on Our Side

This war, fortunately, is not wholly one-sided, however. Governments which glorify war and seek war always have an advantage at the beginning. Nations, such as the United Nations, which hate war, always start at a disadvantage. Sometimes, as in most of the smaller European countries, this first disadvantage means destruction. But we and our great allies—Russia, China, and Great Britain—have the power, the brains, and the will to win over the Axis even in a long and bitter war. We Americans are aided in our war by more than a billion friends and fighting Allies among the United Nations—the people of the following countries:

THE UNITED NATIONS*

<i>Nation</i>	<i>Population</i>	<i>Area Sq. Miles</i>
1. Australia	7,000,000	2,974,581
2. Belgium	8,386,000	11,775
3. Bolivia	3,500,000	537,792
4. Brazil	41,357,000	3,275,510
5. Canada	11,500,000	3,964,900
6. China	457,800,000	4,480,000
7. Costa Rica	639,000	23,000
8. Cuba	4,228,000	44,000
9. Czechoslovakia	15,000,000	54,000
10. Dominican Republic	1,656,000	19,325
11. El Salvador	1,811,000	13,000
12. Ethiopia	5,500,000	350,000
13. Greece	7,197,000	50,250

* Population figures given are the latest available.

14. Guatemala	3,000,000	45,450
15. Haiti	3,000,000	10,204
16. Honduras	1,000,000	44,000
17. India	389,000,000	1,575,000
18. Iraq	5,000,000	140,000
19. Luxembourg	297,000	999
20. Mexico	19,478,000	763,944
21. The Netherlands	9,000,000	13,600
22. New Zealand	1,600,000	103,934
23. Nicaragua	1,380,000	57,000
24. Norway	2,950,000	124,556
25. Panama	600,000	34,000
26. The Philippines	16,350,000	115,000
27. Poland	35,100,000	150,000
28. Union of South Africa.....	10,000,000	472,550
29. Union of Soviet Socialist Republics..	197,000,000	8,095,728
30. United Kingdom of Great Britain and Northern Ireland	48,000,000	94,279
31. United States of America.....	131,669,000	3,022,387
32. Yugoslavia	16,000,000	95,558
TOTAL.....	1,455,998,000	30,486,322

Among our other strong points are these: We control all the great seas except the western side of the broad Pacific, and most of the Mediterranean. Even in these waters where we do not have full control, the enemy cannot operate freely. We control with increasing effectiveness most of the air over the world's battle-fields. We control all the land of the Western Hemisphere, all of Africa, and the greater part of the continent of Asia. We hold Europe's eastern plains, and from England we block the sea door of Hitler on the west.

We have in our hands the great bulk of the world's production plants. At the beginning, our trouble was that our resources were more *potential* than actual because we hadn't put millions of men and women to work building these resources into tools of war. But we are fast remedying that situation. Americans now make, for all our tragic slowness in starting war production, more planes than all the Axis nations put together. We make more guns, tanks, shells, bullets, and other munitions of war than they do. (See Part Three



Acme Photo

The defense and counterattack of the Russian army, helped greatly by United States Lend-Lease aid, is doing much to defeat Hitler's war machine

for factual proof of these statements.) We have something else the Axis warlords do not have—sufficient *food*. We may ration some of it to reduce waste and keep the supply even all around, but there will be no real hunger to cripple the workers in the armies and factories of America.

Victory Is Your Problem

We have one final advantage, and the use of that advantage is the subject of this book. That advantage is our superior manpower—yes, and woman-power. We have the numbers, we have the quality, we have the potentially great trained groups coming from our schools. As Americans we are now 134,000,000 strong, and with our allies over a *billion* strong, we are determined to win.

Because the human element in the equation may finally be the most important, it is what we shall discuss in this book. We do not ignore the value of natural resources, of manufacturing tools and equipment, of food production, and of our distribution system. But wars are not won by materials alone. In the end, it is the human element, the power and strength of all Americans working together, which will win the victory.

In this book we shall talk about the human efforts and qualifications needed for winning the war and how today's students can help win. We shall learn all we can about jobs you can look forward to in the armed services and on the home front. We shall indicate specifically what you can do to help, how you can train for the war job you select, how your out-of-school wartime activities can serve the nation, and how you can prepare for life in the better world which is to come after victory.

2. THE EFFORT NEEDED TO WIN

We, the Newcomers

UP TO NOW the Axis powers have done a somewhat better job than we have in shaping their available raw manpower into legions of trained fighting men. But we can foresee that their advantage will only be temporary. Every day the camps of the United Nations are producing more and more men who are well trained in the stern arts of war.

For Americans, the race to train a mass fighting force is even more important than it is for any other nation. We are the newcomers, the greenhorns in this war. Our allies have been fighting for a long time. They have marshalled great armies; they have trained veteran troops by the millions. China's ill-equipped soldiers have stood off the professional battalions of the Mikado for years. England's fighting men and their comrades from the Dominions have fought hard and well—even in the face of heartbreaking defeats. And the Russians did what no other nation could do before them. They first stemmed the forward march of the Nazi blitz experts who were supposed to be invincible.

Modern Armies Must Be Huge

For us, the picture is different.

True, our Navy is on a complete war footing. Its men are trained, its ships are the best. Shortly after Pearl Harbor its strength reached 350,000 officers and men. But so many patriotic Americans swamped Navy recruiting offices to avenge Pearl Harbor that by the time the President stopped enlistments for men between eighteen and thirty-eight in December, 1942, our fleet had already reached a strength of more than a million fighting men.

Now, a million men make a huge navy. But even two million men make a small army in this war-torn world of ours. Germany and Japan, which together have a population only slightly larger than ours, each had armies in 1941 that were several times as large. Yet we declared war with only about 1,500,000 men in our Army, and even by the end of 1942 we had not many more than 5,000,000. We began the war with about 350,000 men in our Navy, which had increased to more than 1,000,000 by the end of 1942.

By the end of 1943, we will enlarge our combined fighting forces to about 10,755,000, and we may need, before the final triumph, more than 12,000,000 or even 15,000,000 men.

THE GROWTH OF OUR ARMED FORCES*

	<i>End of 1941</i>	<i>End of 1942</i>	<i>End of 1943</i>
Army	1,600,000	5,000,000	8,055,000
Navy	350,000	1,100,000	2,000,000
Marine Corps	51,000	125,000	400,000
Coast Guard	35,000	60,000	300,000

*All figures are estimates.

There is nothing too startling in these figures. In 1918 we had more than 4,000,000 men under arms by the Armistice, a year and a half after we entered the war. Had the war continued, we undoubtedly would have needed millions more. During the American Civil War, the North alone, with a population of but 22,000,000, called 2,500,000 men to the colors. If we took the same proportion of our men into the service now, we would have a fighting force of about 15,000,000 men!

This means that, though the present war calls for great sacrifices and gallant service, it is not likely to put heavier demands upon us than we can meet.

Who Will Our Fighters Be?

For the most part our fighters will be men, although women are serving in the ranks of our military forces by the tens of thousands—in the Nurses Corps, in the WAACs, the WAVES, the SPARS, and the MARINES, as well as in the semi-military WAFFS. But the great bulk of the fighting forces will be men. Women will be needed more for vital war work on the home front.

Also, with only a few exceptions, they will be relatively young men. There are some graying heads in uniform, old soldiers and officers. Many of these men are professional soldiers and sailors, veterans of many years spent with the colors. Others are men who left the service, but who have returned to active duty because of the war. But men in their 'teens, twenties, and early thirties make the



The necessity of building a huge army brought about the Selective Service system and the registration of all men between eighteen and sixty-four years

best fighters, a fact which the Army recognized late in 1942 when it stopped drafting men over thirty-eight.

There are good reasons why the armed forces want *young* men. Military work is hard work. Battle is perhaps the most exhausting activity man has ever invented. Hardship is common in war, for the shifting lines of battle do not lead the soldiers to warm barracks every night. Much heavy labor must be done—digging, lifting, carrying, marching, running. In other words, the typical fighting man must be something of an athlete who can go “all-out” in the battle effort and recuperate rapidly to fight again. Then, too, young people are often without dependents, and they seldom have key jobs in war industry. Thus, when they leave to fight, it does not work too great a hardship on others. So, by all standards, youth must expect to carry the greatest burden of fighting service.

We will see later that the armed forces need many different types of young men. There's a place in the Army or Navy for the ditch-digger and the doctor, the mathematician and the mechanic, the

clerk and the clergyman. In fact, there are more than two thousand occupations in the Army alone—almost an eighth as many as in civilian life!

There Is a Civilian Army

For every soldier in the armed forces, about five workers are needed on the home front to supply him with the tools and materials of war. This is startling when we consider the potential size of our armed forces. It is even more startling when we realize that the time is fast approaching when we may not have the workers needed to do the job at home.

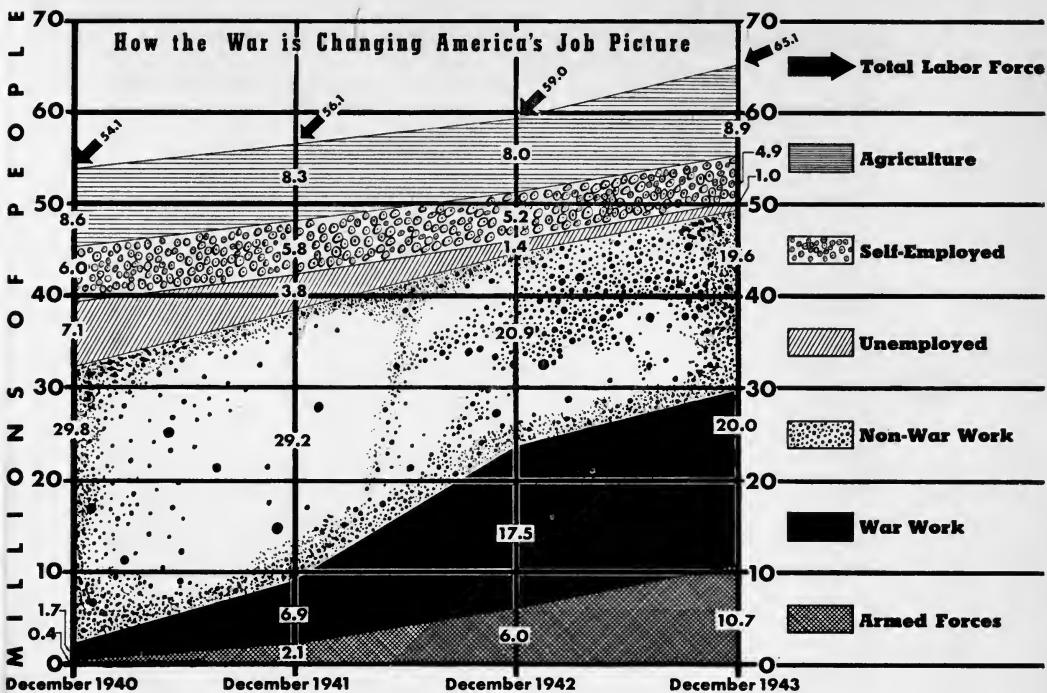
History's highways are littered with the wrecks of once-mighty war machines which broke down because they lacked sufficient manpower behind the battle lines to make them run smoothly. Unless more effective means of utilizing our available manpower can be developed, a nationwide manpower shortage may become our worst war bottleneck. Yet our potential manpower force is our greatest resource in overcoming eventually the Axis powers.

The tremendous effect war has already had on the American worker and the labor market can be judged from the graph which follows. As the graph shows, almost five million more Americans were at work in December, 1942, than held jobs two years earlier. The most sensational changes, however, have taken place (and *will* take place) in our war industries, where at least twenty million Americans will be at work by the end of 1943!

Women to the Rescue

In trying to build a labor force of 65,000,000 workers by the end of 1943, we are faced by a shortage in the supply of labor which can be overcome only if more and more women go to work. By far the largest unused labor reservoir in the country is made up of women who are not now working outside the home. It is sometimes estimated that if women in this group were fully utilized for work outside the home, the total labor force of the United States might rise as high as 70,000,000 or even 75,000,000 people!

The war program promises to have extremely important long-term effects upon the work of women. First of all, about four million women were drawn into war jobs in 1942, and more than sixteen million women are now working outside their homes. A force of



The graph above gives a picture of America's labor force and shows how the war is changing the employment situation throughout the United States

some two million more home women will probably be required during 1943. By December, 1943, there will be about twice the number of women working outside the home that there were during World War I.

This change will also have major effects in terms of the types of work which women perform. For the duration of the emergency, women will generally perform the work they are able to do, not simply the types of work which custom decrees they shall do. The war is burying, at least temporarily, the cherished male notion that women cannot handle most jobs done by men.

How much women will be able to contribute to the labor picture of the United States can be judged by a comparison of women with men in recent tests and observations.

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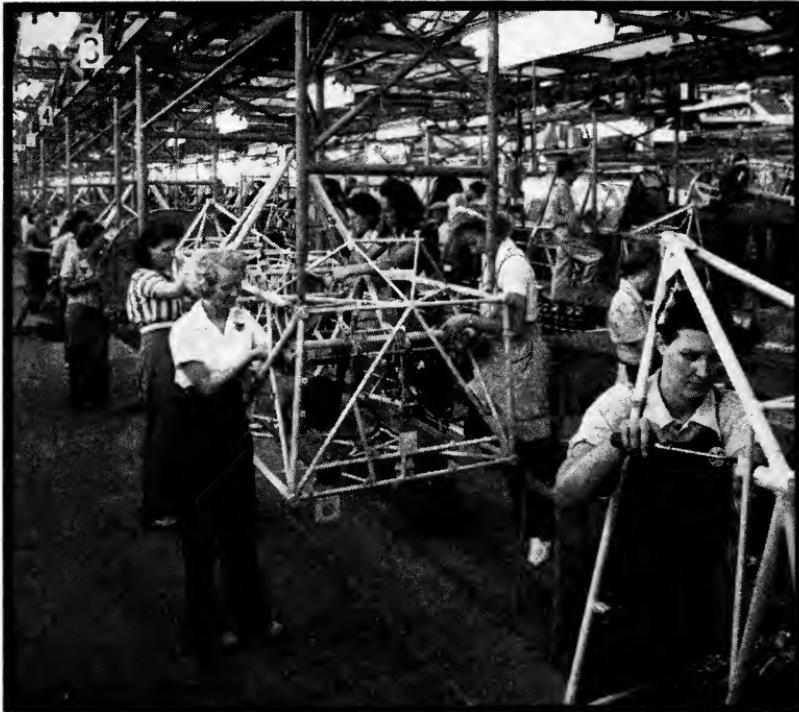


Photo from Vultee Aircraft, Inc.

Women by the thousands are replacing men called to service in airplane and ordnance plants and other large factories turning out the materials of war

1. In physical strength, an average woman is said to be something like 57 per cent as strong as a man, and her physical endurance averages about 68 per cent as great. She can lift a load that is about half as heavy, or pull one that is two-thirds as large.

2. In terms of abilities, women generally are better than men at noticing and recalling details. They are usually superior to men at jobs requiring alertness, patience, good eyesight, finger and hand dexterity, and the handling of small tools. They seem to work better on monotonous jobs, and they are especially good at work requiring the ability to detect small variations in color and taste.

3. Women are usually more susceptible than men to certain kinds of industrial diseases, industrial poisons, and other health hazards.

They require longer rest periods and better seating facilities to work at peak efficiency. Good lighting, adequate equipment, and pleasant surroundings are of more importance to high production by women.

4. Once a job has been thoroughly explained, women seem to require less supervision on the job than men, and they are easier to supervise. Labor turnover rates among women are lower. They are more careful and incur many fewer industrial accidents than men. They damage tools and materials less often.

So it is that, for the types of war industry jobs which have so far been analyzed, women appear to have the physical abilities and aptitudes necessary to perform nearly 80 per cent of all the ordinary operations in war factories, providing they have the proper types of training and experience. In the end, women will make a tremendous contribution for victory.

And There Is a Youth Army

But it will not only be the adult women who jump into the labor force where the men have been called into the armed force, but also the youth now in school. Our 28,000 high schools have more than 6,500,000 students. In addition to those young people who are in high school, there are another 2,500,000 who are fourteen years old and over in some other kind of school. This makes a total of 9,000,000 boys and girls in the national youth army.

What lies ahead for this vast youth army? It carries a grave responsibility in the war effort. But numbers alone are not enough. The real problem lies in getting the youth of America trained to the point where they will be technically useful. Of all war production workers most needed, about a third must be craftsmen of some sort, and about two-fifths must be operators or semi-skilled workers. In the next two years, at least seven million civilian craftsmen and operatives must be trained right from the know-nothing stage, in addition to the needs of the armed services.

Training methods have improved materially during recent months, but they are still not as good as they might be. One trouble has been that schools too frequently have not known what occupations workers need to be trained for in the local labor area. Another problem has been that the right persons have not always been selected for training, particularly where draft-eligible boys were



U. S. Office of Education Photo

Young people will find from careful study that there are many things they can do to prepare themselves to take an active part in helping win the war

trained for industry only to be inducted into the Army before they could take over on the production lines.

These are problems which youth can help to solve by learning to decide for themselves what they *can* do best to help the war effort and what they most *want* to do. In the next few chapters we will consider the specific jobs which are available for youth in the war effort. This material is taken up in Parts Two and Three. Part Two lists military jobs and is of interest mainly to boys. Part Three tells about jobs in industry. This Part is mainly for girls. Part Four tells, however, how a young person can choose the war job he is best fitted for and prepare himself for doing that job well. You will find suggestions in it for analyzing yourself and making a war career selection.

3. THE QUALIFICATIONS NEEDED FOR VICTORY

The Importance of Trained Skills

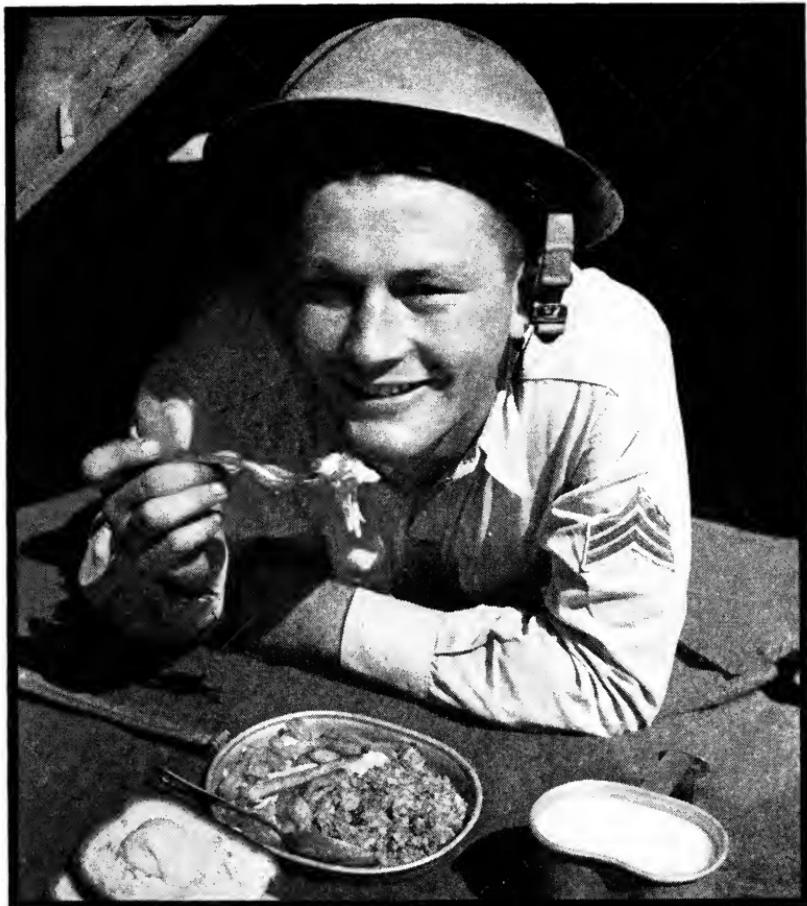
VICTORY is an ideal toward which every American is working these days. To achieve it, however, all of us will have to practice a lot of hard-boiled realism. The qualities we need most to win may be broken down into three general categories: 1) trained skills; 2) physical health; and 3) high morale.

More important in this war than ever before are *trained skills*. In ancient wars the decision of victory depended almost wholly upon the muscles and the speed of the individual fighters. Now that the machine age has caught up with the war, science and cold steel have displaced pure strength in the achievement of victory. Motorized infantry and cavalry require trained men to run the machines. The most highly trained abilities are needed. To take a bomber out across the sky on a wartime assignment, the pilot, the bombardier, the navigator must be experts. And behind the men using the mechanized tools of war must be a much greater number of technicians to keep the tools working.

Also more important are the trained skills of the people at home. Just think of all the care and skill that must go into making and fitting the more than twenty thousand parts required to build even the smallest fighting plane. Or the exquisite precision and fine craftsmanship that must go into machine guns, tanks, bomb sights, jeeps, and the machines which make these tools of the modern army! In the chapters to come, we will see how young people now in school can learn these trained skills which are the key to winning the war.

Physical Well-Being Is Needed

Important as these skills are, they are largely wasted unless the workers who possess them also have strong, healthy bodies. A worker who is idle because of illness is no good to the war effort. Yet more than a million Americans are kept from their work every day by poor health. A selectee who is rejected from military service because of physical disability is no good to the Army. Yet we have



Agricultural Conservation and Adjustment Administration Photo

Our Army is the best-fed, best-clothed army in the world, because we know that only physically fit, healthy soldiers can do the job demanded of them!

already lost more than thirty divisions of men who could not meet Army physical standards and induction centers are still rejecting two out of five men!

Among the more common and therefore less conspicuous causes of physical ill health are tooth troubles, eye defects, and malnutrition. These defects can usually be detected by the student himself, or by

his teacher, school nurse, or doctor in plenty of time to correct them. It is extremely important for the student himself to note whether his teeth, eyes, and general health condition are all right. If he suspects that they aren't, he should call the fact to the attention of his teacher or doctor so that the trouble can be remedied before it becomes serious.

Highest Morale also Is Needed

If the body is well, the mind usually will be also. But in wartime this may often not be true, because of the many new troubles and strains which people must undergo. Such strains frequently occur because of longer work hours, shorter food rations, and worry about family members and friends who may be fighting at the front.

One of the best ways to keep up morale is to keep interested. People who keep busy with healthful work and healthful recreation have little time to worry, which never does them any good anyhow.

In later sections of this book, we will explain why these three qualities—trained skills, physical health, and good morale—are so important to America's victory program. Before that, however, we will describe in some detail the various *types* of war jobs that are now open to American youth.



Photo by U. S. Army Signal Corps

PART TWO

FIGHTING

FOR

VICTORY

4. JOBS FOR BOYS IN THE ARMED FORCES

Jobs for All

WHETHER YOU ARE a boy or a girl, it is almost certain that you will be required to have a war job soon after you reach eighteen. You are in school now, rather than in the armed forces or at work, only because Uncle Sam believes that you will be a more useful war worker after you have had more training. You are *on loan* to your school until you are prepared for a war job.

In this Part we will talk about the fighting jobs in the war program for which you can start preparing now. Chapters 4 through 7 discuss jobs in the armed services for boys; Chapter 8 discusses Army and Navy jobs for girls. Then in Part Three we will outline the jobs for both boys and girls in fields other than the armed forces, such as industry and agriculture.

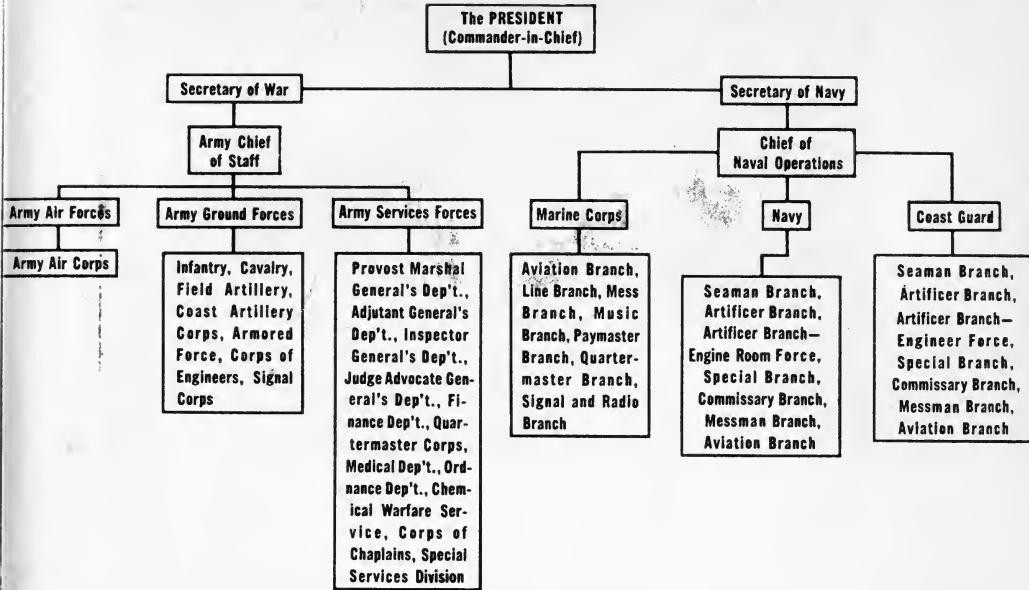
The Different Branches of the Armed Services

Because war on the water is a far different thing from war on land, our fighting forces are divided into two main groups: the Army and the Navy. Both groups have as their commander-in-chief the President of the United States. Each group has a cabinet officer at its head who is appointed by the President. They are the Secretary of War and the Secretary of Navy, both of whom are assisted in their work by many experts, some of whom are civilians and some of whom are in uniform.

Each of these fighting forces has certain sub-groups under its direction, such as the National Guard which in wartime comes under the Army, and the Coast Guard which in wartime comes under the Navy. Another group which is under the direction of the Navy is the United States Marine Corps, the soldiers of the sea. But the Marines, though directed by the Navy, are a separate organization in almost every respect.

Division of Duties

The Army, the Navy, the Marine Corps, and the Coast Guard each has its own important sphere of military operations. Though



This chart indicates in a general way the organization of the U. S. armed forces

they often work together on fighting missions, they divide the labor of war between them in this way:

The Army meets the enemy on the field of land battle. It carries the war to enemy soil, and would, if our homeland were invaded, drive the enemy out. Army work is a business of planes and guns and tanks and trucks and grenades and rifles and bayonets—yes, even of gun butts. It is a business done in the mud or the sand or the snow, at close grips with the enemy.

The Navy has a ranging mission that is no less important. Its job is to smash the enemy's fleet, to fight along with the Army and the Coast Guard in preventing an invasion of our soil, and to assist an invasion of the enemy's country. The Navy and the Coast Guard have the job of driving the enemy's merchant ships from the seas and of protecting our own merchant ships. To a nation like ours, with thousands of miles of vulnerable coastline to guard, sea power



U. S. Marine Corps Photo

Amphibious landing craft such as this are standard invasion equipment for our marines. This one is landing reinforcements on the beach at Guadalcanal

is of first importance. The main tools of the Navy are fighting ships, airplanes, big guns, torpedoes, and submarines.

To the Marine Corps goes, first of all, the job of fighting its way ashore from naval vessels where needed. When an island is to be captured or an enemy base raided, the marines pour over the ship's sides into their barges and charge through the breakers to meet the enemy on land. The Marine Corps is primarily a land fighting force, like the Army, but it gets where it is going by ship. The marines have some other jobs, also. They man a few of the guns on Navy ships and protect the shore bases and shipyards of the Navy. They garrison some of our smaller possessions—the nation will never forget the heroism of the Marines on Wake Island and Midway.

Life in any military or naval organization is divided between training and action. In times of peace, training is almost the only job to be done, aside from the routine of feeding, housing, and caring for the troops. In times of war, training may be short indeed (often lasting less than twelve months), and the periods of action may be very long.

But because battle, by its very nature, is always changing, always

uncertain, we have chosen to talk about the ordinary routine life in the armed forces in our job sketches below. There can be no job description of battle. The soldier may see his first action in a devastated, bloody field under heavy artillery fire. He may sweat in Africa or freeze in the Arctic. He may ride to battle in a tank or listen to the guns from far behind the lines where he is working as a repair mechanic. And the sailor may face the bitter odds of war at sea, in action of huge fleets, in a ship-to-ship fight with a single enemy vessel, under air attack, or in a fight with a submarine.

In battle it makes little difference what your job is, what armed group you are a member of. Since President Roosevelt was forced by the manpower shortage to halt the enlistment of men between the ages of eighteen and thirty-eight, the Armed Forces can no longer promise that you will be allowed to pick your branch of service when you are called to duty. Government officials have promised that in most cases, however, young men will *still* be permitted to choose a branch when they are inducted. Since this will probably be the case when your number comes up, you will want some information on which to base your choice.

Military Service as a Job

Forgetting about patriotism and the rewards of victory for a moment, let's look at military service as just another job, just another career, and see what it has to offer in the way of pay, security, working conditions, and personal satisfaction.

The first question we face is: How much do military jobs pay? The answer to that question is not easy to find, because workers in military service receive rewards that do not appear in their monthly pay envelopes.

The enlisted soldier, the sailor, the marine, and the coast guardsman, while on active duty with the regular forces, receive food, lodging, medical care, clothing, and equipment in addition to their cash earnings. Commissioned officers pay for these things but receive a cash allowance which covers part of their expenses for food and lodging.

Cash pay in the four main armed forces is determined by law and is governed by several factors. What is called base pay for enlisted men is fixed by a man's grade or rank. There are seven grades of enlisted men, first grade being the highest paid, seventh

grade the lowest. Beginners start in the seventh grade, which is known in the Army and Marine Corps as the rank of private, in the Navy and Coast Guard as the rank of apprentice seaman. The first grade includes master sergeants in the Army and Marine Corps, chief petty officers in the Navy and Coast Guard. Advancement from one grade to another comes, like promotion in business or industry, on the basis of merit.

To the base pay is added what is called longevity pay. This is simply a system of automatic pay increases for men who have served a certain number of years in the armed forces. In the Army and Marine Corps further additions to base pay can be won by men in the two lowest grades by qualifying as specialists. Privates and first class privates in the Army often may qualify as specialists in various trades, and as a result receive from \$3 to \$30 additional a month as specialists' pay. Aircraft mechanics may receive even higher pay as specialists. Additions also are granted enlisted men of all ranks who win medals for distinguished service. Finally, all men who fly regularly, operate submarines, or do certain other special jobs get additional pay.

Real Earnings and Advantages in the Armed Forces

To some civilians military wages may seem very low. It must be remembered, however, that food, lodging, and medical care, which take a large slice of the civilian's pay check, are given free to the soldier, sailor, marine, and coast guardsman. A civilian living in the city is lucky if he can get board and room for \$10 a week—that is, decent meals and a clean room. He is lucky if he can get through a year in such good health that full medical and dental attention will cost him only \$20 for the year. If we add these modest charges (\$540 a year) to the pay and clothing allowance of soldiers and sailors, we find that the average enlisted man in the Army got the equivalent of about \$1,060 a year, or \$88 a month in peacetime, while the average enlisted man in the Navy got more than \$1,420 a year, or about \$110 a month. Today, with the increased pay now being earned by enlisted men, the figures read above \$1,250 a year for the Army and \$1,560 for the Navy.

In normal times the Army units spend most of their hours at regular Army posts, which have well-built barracks and tents for the men. These are equipped with all sanitary conveniences and are



Official U. S. Navy Photograph

In the Navy the job of keeping sailors well is so important that specialists' ratings are given to pharmacists and each ship is equipped with a dispensary

heated in winter, screened in summer. Almost every one of the barracks has a recreation room, usually equipped with a radio, card tables, and a library. At most posts there is also an enlisted men's clubhouse.

Sailors and marines usually live in barracks while ashore. At sea their quarters may be quite comfortable, or they may be very crowded, depending upon the ship. The crew of a submarine, for instance, lives in a very small space while under way.

In the armed forces meals are designed by experts to give every important food value. They are prepared by trained cooks in kitchens which are regularly inspected for cleanliness. When the Army or Marine Corps goes into the field, the kitchens follow on wheels. In addition, soldiers and marines carry emergency rations in their regular packs.



U. S. Marine Corps Photo

Marines, when not in actual combat, do many other jobs. Here they are busy building fortifications and entrenchments around Guadalcanal's vital airfield

Uncle Sam is anxious to keep his soldiers and sailors in the best of health, so he provides excellent medical and dental care for every man in the armed forces. An enlisted man does not have to pay a cent to doctors, dentists, or hospitals during his period of service.

Disadvantages in Military Service

No occupation, looked at from a purely selfish viewpoint, is entirely satisfactory, so let's examine the disadvantages of military

life, whether in the Army, Navy, Marine Corps, or the Coast Guard.

One of the major disadvantages of all full-time military work is that it separates the soldier from his home, his community, his friends, and his family for long periods of time. Often it carries him thousands of miles from his own part of the country.

Another disadvantage is this: you have to start at the bottom in military service. In the Army, for example, enlisted men all begin as buck privates. Their pay is low, and their work and drill are simple and routine, just as is the beginner's job in business or industry. The newcomer cannot be too fussy. He may peel potatoes or dig a ditch. He will certainly spend hours doing right face and forward march.

Then there is discipline, perhaps the hardest side of military life for some young men. Discipline in all the armed forces is extremely rigid. If you will think a moment, you will see why this must be so. An army or navy or marine corps—any combat force—is in existence because every nation must, at certain times, meet dangerous and difficult situations which call for the use of force. To be effective it must work like a well-oiled machine. What it achieves is but the sum total of the individual achievements of the men who make it up. In battle, an order given must be an order obeyed—promptly and without question. Without this perfect cohesion between the officers and men, the result would be disastrous. Battles have been lost—and won—by the smoothness with which soldiers in the ranks have carried out their officers' commands.

Finally, of course, there is the chief disadvantage—the danger of being wounded, captured, or killed. No one can deny that this danger exists, that it is very real. Modern warfare is built upon the use of great quantities of materials, munitions, and—men. Yes, the danger to life is a very real one in military service, but young Americans are freedom-loving people who are accustomed to make any and all sacrifices in defense of their liberties. The things that make us free men and women were never handed to us on a silver platter. These things—the rights and freedoms denied to the slave nations of the Axis—are worth fighting for, and dying for, if need be.

It is with this belief that the young men of America accept the disadvantages of military life. And it is with this belief that the American people confidently place the future of our country in the able hands of Uncle Sam's fighting men.

5. JOBS FOR BOYS IN THE ARMY

The Organization of the Army

THE ARMY of the United States—which includes the Regular Army, the “draftees,” the National Guard, and the Organized Reserves—has a top-ranking professional soldier as the Chief of Staff, who heads the General Staff. The General Staff is a sort of executive committee for the whole Army.

Under the General Staff, Army forces are broken down into three main divisions: Air Forces, Ground Forces, and Service Forces. Each of these has its own commanding general.

The Air Forces include the personnel of the Air Corps, all equipment, and all other personnel working with the Air Forces. The Ground Forces include the Infantry, Cavalry, Field Artillery, Coast Artillery Corps, Armored Force, Corps of Engineers, Signal Corps, and Air Corps units which may be attached to these combat units. The Service Forces comprise such branches as the Quartermaster Corps, the Medical Department, the Finance Department, the Chemical Warfare Service, the Ordnance Department, the Corps of Chaplains, and the departments of the Adjutant General, the Inspector General, and the Judge Advocate General, which handle respectively the management, inspection, and legal matters of the Army.

For combat purposes the Air Forces and the Ground Forces are combined to form the Arms. The Service Forces exist primarily to help the fighting units and seldom engage in battle themselves.

Jobs in the Air Forces

In the Air Forces, enlisted men can get training as mechanics and ground crew men, but most pilots in the military forces are commissioned officers. This does not mean, however, that the only way to become a pilot is to graduate from West Point. Both the Army and Navy maintain special flight training schools which are open to young men without military experience. They are also open to a number of enlisted men.

Student flyers in the Army are known as flying cadets. In the past, most of these cadets entered the flying schools directly from civilian life and were considered a group apart from either officers or enlisted men. With the stopping of Army enlistments, however,



Photo by U. S. Army Signal Corps

The Air Corps is the most rapidly expanding branch of the Army, requiring pilots, navigators, bombardiers, radio operators, and ground crew workers

all cadets are now being placed through regular Army channels. Boys of seventeen can still enlist in the Air Forces Enlisted Reserve Corps, and men between eighteen and twenty-six can qualify for aviation cadet training by taking special qualifying examinations before being drafted and getting assigned to cadet training after induction. The course of instruction for these cadets lasts about thirty weeks.

After cadets complete ten weeks of elementary training, they are sent to Randolph Field, Texas; Moffet Field, California; Maxwell

Field, Alabama, or another basic flight training field for the ten-week basic course. On graduation from this course the cadets go to Kelly Field, Texas, or another advanced training field for their final ten weeks of advanced training.

The thirty-week course includes about 215 hours of actual flying. Cadets learn all the essentials of flying military planes, including various types of maneuvers. But flying is not the whole story. Cadets are also instructed in navigation, meteorology (the science of weather), radio, and other related subjects. In addition, cadets take classroom work in specialized military subjects.

Throughout the entire course cadets are paid seventy-five dollars a month and a ration allowance of one dollar a day. The government provides living quarters, uniforms, and all necessary equipment. Transportation from the place of enlistment to the school is provided, and students who fail to qualify for their wings may be placed in some other Air Corps job or returned to the regular enlisted ranks of the Army. During their service they receive all medical and dental care free.

Qualifications of a Flying Cadet

To secure appointment as a flying cadet, a young man must have the following qualifications:

1. He must be a citizen of the United States.
2. He must be at least eighteen and not more than twenty-six years of age.
3. He must pass a special mental examination (known as the Air Corps screening test).
4. He must give evidence of excellent character.
5. He must be of sound body and in excellent health. The physical examination is very strict. Only men who have a sound physique, perfect eyesight, good heart, sound nerves, and a good sense of balance are accepted. All cadets must be at least five feet tall, and must not be more than six feet, four inches—with weight proportionate to height. Specifications vary for particular jobs. Because cockpits of their planes are so small, for example, many pursuit plane pilots may not be more than five feet, nine inches tall.

In addition to flying, Army pilots get a chance to continue train-



Photo by U. S. Army Signal Corps

Radio communications and repair work are vitally important in the Army

ing in radio, navigation, engineering, and other subjects, and they are free to choose courses in which they desire to specialize.

There is no better aviation training than that given to flying cadets. If a young man were to take a comparable course at a private aviation school, he would have to spend from \$2,000 to \$4,500 on tuition alone, besides paying all his expenses.

If a cadet is "washed out" (found unsuited for a career as pilot),

he may, if he wishes, apply for transfer to training as a meteorologist, navigator, bombing instructor, or bombardier (bomber). These jobs have stiff mental and physical qualifications, too, but do not require the cadet to be a pilot. During training for these jobs, the cadet keeps the same status of rank and pay as he had before being washed out. This type of training is also open to qualified soldiers who are high-school graduates in good health and who can pass the intelligence test.

Only a small percentage of the men connected with aviation are actually pilots. We are building an Air Corps of 2,200,000 men and only 300,000 of these will be pilots. This is true in both military and civilian aviation work. For every pilot, there must be many skilled mechanics, radiomen, maintenance men, office workers, weather experts, and so on. In military aviation there are also many men who go up in the planes but never pilot them. These include gunners, photographers, navigators, radiomen, and observers. If you will turn to page 127, you will find a picture of a radio operator doing his job in one of Uncle Sam's big bombers. Look, too, at the descriptions of Army air force jobs to be found on pages 194, 195, and 196 of this book.

Many highly skilled jobs in the Army Air Forces are open to enlisted men. To train these men, the Army maintains several training schools. The most important of these is the Air Corps Technical School, which has branches and conducts classes in many parts of the United States.

The Infantry

Infantry, the largest arm of the Army, is probably the most decisive force in battle. When the air corps, the artillery, and the cavalry have done their job, it is the infantry that advances or holds the line. The terrific striking force of the other arms is necessary in modern war, but the infantry still supplies the manpower as it always has.

Once it was easy to describe the infantry. It was made up almost entirely of soldiers who marched on foot and were armed with rifles and bayonets. But the infantry of today is a complicated organization with many different weapons and machines to help it. One of its most sensational new branches is made up of paratroopers—airborne infantrymen who bring death to the enemy from the sky.



Photo by U. S. Army Signal Corps

Soldiers in the infantry, who must win and hold territory in the face of heavy enemy assault, are expert marksmen with the Garand automatic rifle

Infantrymen also make up a large share of the Rangers—our new Commando unit.

Certain infantry units are made up of machine gunners. Others are armed with automatic rifles (a sort of sub-machine gun). In addition, infantrymen on the attack often carry powerful hand grenades.

Army tank units are frequently part of the infantry. Their crews, unlike most infantrymen, go into battle riding instead of walking. With their land battleships well armored, with machine guns and small cannon blazing, these tractors of war are the leaders of infantry attacks. The importance of tanks in modern war was first demonstrated when the German forces shattered the major French resistance in three short weeks. The victories of the British Eighth Army and the American Expeditionary Force in North Africa in the spring of 1943 reaffirmed that importance.

Finally, the infantry has its own pieces of artillery. For defense against tanks, infantrymen are given small cannon that can pierce

armor plate. They also have trench mortars that toss a light bomb high in the air to fall on protected enemy positions.

There is plenty of room for specialization in the infantry. Though this arm is still largely made up of men who march on foot, it maintains fleets of trucks for carrying supplies. Therefore, drivers and mechanics are needed in great numbers. Clerks, carpenters, cooks, musicians, and many other craftsmen are also found in the infantry.

The Cavalry

If you think of the Army as a football team, the cavalry is its star open-field runner. Swift and strong, it provides power wherever it is needed in the quickly changing patterns of battle. It is also a very useful scouting force, ranging far and wide to find out and report what the enemy is doing.

Cavalry is a branch of the Army that is changing rapidly. Once it was entirely a force of men on horses, but now many of its units use gasoline instead of oats for fuel, and auto mechanics rival horse-shoers as craftsmen of the cavalry. Swift combat cars very much like tanks, armored cars, and other motor vehicles are giving new speed and fighting power to this arm. However, quite a few of our cavalry units are still mounted on horses.

The cavalry is no stick-in-the-mud relic of past military tactics. It is progressive and modern. Radiomen, electricians, and truck drivers are keeping it abreast of modern science.

The Field Artillery

For color and speed, watch a field artillery battery go into action. Although many field artillery batteries are now mechanized, others are still pulled by horses. Clouds of dust swirl about the trail as ten teams of six horses each come up at a gallop. Behind four of the teams roll the seventy-five-millimeter guns (guns which throw a shell about three inches in diameter), the big noise of the light artillery. Each of the other six teams pulls a caisson—a case packed with shells which is mounted on two wheels. Each of the ten teams is guided by three riders.

The artillery battery arrives at its appointed position and swings into line like clockwork. By the time the dust has settled, the four guns are already detached from their horses and lined up ready to



Photo by U. S. Army Signal Corps

This camouflaged three-inch antiaircraft gun is set up and manned by the Coast Artillery Corps to protect our shores against enemy air attack

fire. Behind each gun is a caisson, and two other caissons are at one side of the battery. Less than a minute after arrival, the crews have loaded their guns and are ready to fire the moment they are given the range.

An artillery gun crew labors with the smooth efficiency of perfect teamwork. A good crew, firing continuously throughout a three-hour battle, can fire five hundred shots, or almost three shells a minute with a single gun.

In addition to the gun crews, the field artillery uses experts in many different lines of work. First of all, it needs observers who often do their observing in the air, to locate the enemy and check the results of shelling. Second, it needs experts in radio, telephony, and telegraphy so these observations and other information can be reported quickly to the batteries. Finally, the field artillery needs expert drivers and auto mechanics, since tremendous loads of shells must be shipped to the firing batteries during action.

The Coast Artillery Corps

From Maine to Texas and from Washington to California, our nation's boundary is the blue waters of the open oceans. It is the job of our Coast Artillery Corps, co-operating with other Army forces and with the Navy, to see that the boundaries are held firm against any possible attack. The coast artillery is trained to the highly important job of preventing the landing of enemy forces, or the bombardment of our coastal cities by enemy battleships. All over the world, too, the coast artillery protects American soil against invasion and attack. Since attack may now come by air, the coast artillery has also been given the job of manning antiaircraft guns to defend cities and bridges and military establishments.

Part of our Coast Artillery Corps is stationed in forts near important harbors. These units stand ready to blast enemy ships from the water while they are still far out at sea. The big guns of the harbor forts can fire a sixteen-inch shell weighing over a ton and capable of piercing battleship armor twenty-five miles away. Other coast artillery units, armed with smaller guns, move up and down the coast by railroad or tractor. Mobile units are so trained that they can race quickly to any point that should be threatened along our coastline.

The coast artillery needs plenty of experts. All types of communications work, especially radio, are essential to effective coast defense, and to co-operate with the Air Forces and Navy. The guns themselves are complicated machines, and the men who fire them often must use intricate instruments.



Photo by U. S. Army Signal Corps

In modern warfare the tank is one of the most important weapons, and our Army is building a mighty armored force to smash the mechanized Axis panzers

The Armored Force

The Armored Force is the newest fighting branch of the Army. It is, as its name implies, made up of troops who fight in tanks and other armored motor vehicles. Its job is to smash the enemy line, or to slash past his line and range through his rear, cutting supply lines, demoralizing his forces, seizing key points, and securing information. We have seen how brilliantly our fighters had mastered these techniques during the victorious North African campaign.

Its fighting men live with their vehicles. They learn motors backwards and forwards. They learn special tactics, special maneuvers. Their job is one of the most daring and most important in the Army. Day by day, the Army is building an armored force that will be second to none in the world.



Photo by U. S. Army Signal Corps

The Corps of Engineers both builds and destroys roads, bridges, and buildings. It moves ahead of the Army and prepares the way for its successful advance

The Corps of Engineers

Do you want to dig a canal between two oceans? Or teach the Mississippi River how to behave? Or build a bridge in a hurry (as the Russians did recently—*under water*—to foil Nazi bombers)? Or get the best possible maps of a few thousand miles of mountain or jungle? Or construct a road for heavy trucks and keep it in good condition despite shellfire? Or run up barracks for ten thousand men?

If your pet project includes any of these activities, you could do worse than call on the Corps of Engineers of the United States Army. It has done and is doing all those things, as well as many more, day in and day out.

You don't have to be an expert to join the Corps of Engineers, but you have a good chance to become one while serving. You may

start out doing common labor, but if you show ability you will probably be sent to school for specialized training in some craft. And if you are promoted to a corporal's position or a sergeancy, you will be well on your way to learning the art of being a good foreman.

The Signal Corps

No business of any size operates today without an elaborate system of communications. By telephone and telegraph, even sometimes by radio and facsimile transmission (picture by wire), the executive of a business keeps in touch with his staff and his customers and suppliers.

An army has a much greater communication problem than any business, because when it is engaged in its most important work, field action, its forces are scattered far and wide, and split-second teamwork among the forces often makes the difference between life and death.

And so, we have the Signal Corps. With radio, telegraph, teletype facsimile transmission, telephone, homing pigeons, and every other device man has worked out to carry messages, the Signal Corps keeps the flow of orders, reports, instructions, and advice moving through the Army, no matter what the circumstances. Like the engineers, Signal Corps men learn crafts of great value in civilian life. Note the large number of Signal Corps jobs described on pages 190, 191, 192, 193, and 194 of this book.

The Service Forces

The *Quartermaster Corps* is known as a "service" rather than an "arm" because it is not ordinarily a fighting group. Its job is to see that the other arms and services are fed, clothed, housed, and supplied with equipment and utilities. It buys much of the material the Army needs, stores it in warehouses, and ships it (often in its own trucks) to points where it is needed. It has a huge bookkeeping problem, yet is concerned with such ordinary jobs as cooking, baking, operating retail stores for the soldiers, doing the maintenance and upkeep work for Army buildings, operating laundries, and so on. Many crafts, from truck driving to tinsmithing, from welding to gardening, are found among the men who make up the Quartermaster Corps.



Photo by U. S. Army Signal Corps

One of the achievements of our medical men in this war has been the use of blood plasma for transfusions on the scene of battle, thus saving many lives

The *Medical Department*, another branch of the Services, has the job of keeping the Army healthy. From first aid at the battlefield to research into the causes and cure of strange diseases, the Medical Department wages an endless fight for life. Those who saw the motion picture *Yellow Jack* will remember that it was the heroism of the Medical Department's enlisted men, as well as the genius of military doctors, which proved that yellow fever could be wiped out.

The doctors of the Medical Department are commissioned officers, but enlisted men are needed in many medical jobs. Stretcher bearers, ambulance drivers, hospital attendants, dental assistants, veterinary assistants, sanitation specialists, X-ray technicians, and laboratory technicians are among the many types of men found in this service.

The Medical Department comprises five corps: Medical, Dental, Veterinary, Medical Administrative, and Army Nurse. (The latter group is discussed in detail in Chapter 8, since it is a group which is of most interest to girls.)

Another specialized Army Service, the *Finance Department*, has charge of paying out and accounting for all funds appropriated by Congress for the Army. This department pays the salaries of all War Department personnel, military and civilian, and pays the amounts due to private concerns for all Army purchases, whether they are shoelaces or bombers.

It is the task of the *Chemical Warfare Service* to develop and supply the smokes, gases, and incendiary materials used in war, and the weapons from which to fire these chemicals. It also trains special gas troops and is charged with the job of protecting the whole Army against the enemy's chemical attacks. Chemical Warfare units "neutralize" enemy positions with gas and burning materials, and cover the enemy with smoke so he cannot see our troops to fire at them as they attack.

The *Ordnance Department* has the responsibility to design, obtain, and distribute to the arms and services which use them all the weapons and ammunition with which war is fought. The work of improving old weapons and developing new ones, which goes on constantly in time of peace as well as war, is also carried on by this department. The list of weapons, ammunition, and other materials handled by the Ordnance Department contains more than 2,500 separate items, and these items have altogether more than 250,000 different parts.

The *Corps of Chaplains* is specially charged with the religious welfare of members of all arms and services. This corps is made up entirely of officers. In war, each regiment, brigade, and larger unit has its own chaplain, who is like the pastor in civil life, except that in the Army he provides for the spiritual welfare of the entire command and not merely of one particular religious group or denomination. Chaplains are selected from the various religious denomina-

tions for duty with the Army in proportion to the number of members of each of these denominations in the Army as a whole. Thus, Army chaplains represent all three large faiths—Protestant, Catholic, and Jewish. Chaplains must be college and theological seminary graduates with at least three years of practical experience in parish work, and they are certified to the War Department by their respective denominations as suitable for commission.

Pay in the Army

The following table will show you graphically how the various pay scales are arranged for non-commissioned officers and privates in the Army. Base monthly pay ranges from \$50 to \$207, with food, clothing, quarters, medical and dental attention, and training thrown in free.

Private (7th grade).....	\$50-\$75
▲ Private, 1st class (6th grade).....	54- 81
▲ Corporal (5th grade).....	66- 99
▲ 5th grade technician.....	66- 99
▲ Sergeant (4th grade).....	78-117
▲ 4th grade technician.....	78-117
▲ Staff sergeant (3rd grade).....	96-144
▲ 3rd grade technician.....	96-144
▲ Technical sergeant (2nd grade).....	114-171
▲ First sergeant	114-171
▲ Master sergeant (1st grade).....	138-207

We have spoken so far only about the enlisted men. Officers, like executives in business, receive higher pay and have a higher social standing, greater authority, and a lot more responsibility.

Like enlisted men, officers receive pay based partly on their rank and partly on their length of service. They do not receive free clothing, food, or lodging. They do, however, receive an allowance which pays for part of their food and lodging.

Cadets at West Point, training to become commissioned officers, receive \$780 a year (and subsistence). The lowest pay given officers (for second lieutenants) is \$1,800 a year, plus about \$700 a year allowance for living expenses.

The highest pay (including allowances) which an officer in the Army may receive is that of a major general, lieutenant general, or full general—just under \$10,000 a year. Following are Army and officers' salaries by grades; the insignia are silver unless otherwise indicated:

Grade	Minimum Annual Pay	Maximum Monthly Pay	Allowance With Dependents	Allowance Without Dependents	Monthly Limitation on Pay Allowance
2nd Lieutenant	\$1,800	250.00	102.00	66.00
1st Lieutenant	\$2,000	300.00	117.00	81.00
Captain	\$2,400	375.00	132.00	96.00
Major	\$3,000	437.00	168.00	111.00	600.00
Lt. Colonel	\$3,500	500.00	162.00	126.00	600.00
Colonel	\$4,000	500.00	162.00	126.00	600.00
Brig. General	\$6,000	500.00	162.00	126.00	625.00
Major General	\$8,000	666.67	162.00	126.00	808.33
Lt. General	\$8,000	666.67	162.00	126.00	808.33
General	\$8,000	666.67	162.00	126.00	808.33

Training Opportunities in the Army

The Army, the Navy, and the other armed forces are among the finest schools for young men who want to learn a civilian trade which will help them land jobs and earn decent salaries. *They are among the very few trade schools which pay their students a salary and full living expenses while they are going to school!*

There are four main ways in which our armed forces train men in useful trades. First of all, military men learn by *doing*. The day-to-day work of the Army, Navy, and other military forces requires hundreds of different specialized operations. The man whose military job is pounding a typewriter or repairing trucks or running



Signal Corps, U. S. Army

Every soldier on entering the Army is examined, issued clothing and equipment, and completely outfitted for the life he will lead while in service

a telephone line or building a bridge is acquiring experience, just as if he were working at a civilian job.

Next, each of our armed forces trains men by putting them through full-time courses at schools. Men selected for full-time schools are released temporarily from their regular military duties to become students. Some of these schools are highly technical and advanced. Others teach elementary subjects. Appointment to these schools is often a much prized reward for special ability, and the courses are often difficult and exacting. The armed forces lose no time in flunking poor students and sending them back to ordinary duty.

Most famous of the Army's many schools is the United States Military Academy at West Point, New York, but there are many other schools belonging to the Army. In fact, each branch of the Army operates its own schools. These schools are spread all over the country and are open to all men who are deemed qualified for the training they offer. Sometimes soldiers are given school training even before they take their basic military training.

Another type of training is that given in part-time schools con-

ducted at the camps. In participating in such a program, a soldier spends part of his time with his company and carries on many of his regular duties, but is released from other tasks a few hours each day for special training. Such part-time training classes are found in almost every Army post, Navy yard, and large naval vessel.

A soldier's training starts as soon as he reaches his training camp. The first days are spent in becoming familiar with basic principles of army life, with discipline, courtesy, neatness, and drill. Once this training is completed, the Army prefers to use a man in the field of work for which he already has some training, ability, and interest. A first-rate auto mechanic will probably not be trained as a horse-shoer, and the Army is unlikely to use a typist as a telephone lineman. (For further discussion of training opportunities in the Army see Chapter 12.)

The Trades the Army Uses

The Army has use for a large number of specialists, technicians, and craftsmen, to handle the many skilled trades necessary to modern warfare. All told, two out of every three men in the Army must be trained specialists. Some of the leading trades needed by the Army are: cooks, auto mechanics, medical technicians, general mechanics, telephone and telegraph linemen, carpenters, radio operators, and aviation mechanics. (For a more complete list of Army occupations, see page 190.)

In addition to training green men where shortages of specialists occur, the Army conducts many training courses for men with trade experience, in order to acquaint them with the particular problems involved in carrying on their trade in the military service. Through these courses, civilian truck drivers are converted into drivers of the huge 10- and 14-ton Army truck transports; peacetime radio "hams" are converted into radar operators; doctors are taught to diagnose and prescribe for diseases prevalent in battle areas, and so on.

Admission to the various Army trade schools depends mainly upon the individual. For some work a high-school or even a college education may be required. Some courses call for definite experience, while others may be open to those who show evidence of the ability to learn and practice a trade after adequate training. The Army wants its men to be skilled, and a soldier who shows talent, background, and willingness to learn will get every possible chance to be trained.

6. JOBS FOR BOYS IN THE NAVY

The Organization of the Navy

IT IS NO ACCIDENT that the first Axis attack upon the United States was aimed at a naval base—Pearl Harbor. America was a first-class sea power before the European war began. In the early thirties, its force of about 100,000 men made it one of the two strongest navies in the world. By December, 1941, our naval personnel had passed the 300,000 mark, and the Japanese knew that our fleet had to be annihilated if they hoped to win their war of conquest in the Pacific. They failed in their sneak attempt, and hundreds of their ships that already litter the ocean floor show the huge price they are paying for that failure.

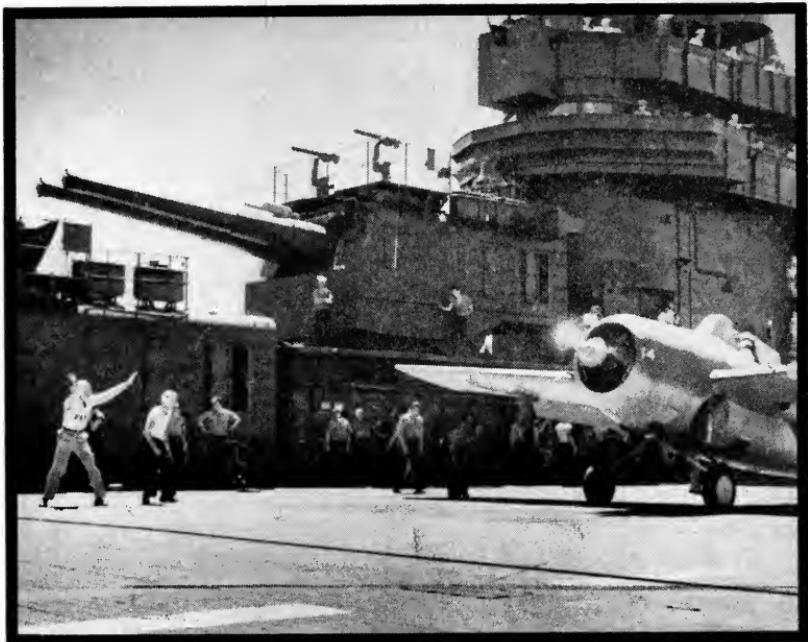
By the end of 1943, our Navy will have about *two million* men, nearly seven times what it was when the Japs first attacked! Shipyards are working day and night to give this mighty force the warships it needs to sweep the seas clear of the last Axis surface and underwater battle fleets.

Because life in the Navy is most often life aboard ship, let's discuss these warships for a few pages and find out what they are, where they work, and how their personnel fits into the general fighting picture. Then we'll discuss Navy jobs.

America's Men-o'-War

The giants of the fleet are the big *battleships*—or battlewagons, as sailors call them. These are giant forts of steel armor plate casing tremendous engines that can drive them at thirty knots an hour. Their tonnage is immense (the *U.S.S. New Jersey*, launched in 1942, is a monster displacing 45,000 tons!). They are protected by long-range guns, which often fire shells sixteen inches in diameter, and are jammed with all kinds of special equipment designed to operate the ship, maintain communications, and fire the huge guns. (Battleships, incidentally, are named for states.)

A battleship has a crew ranging from about 1,200 to 1,600 men, roughly the strength of an Army regiment. Her commander, a captain, ranks as high as an Army colonel. The battleship is the last word in naval combat. She is designed to fight anything afloat or in the air.

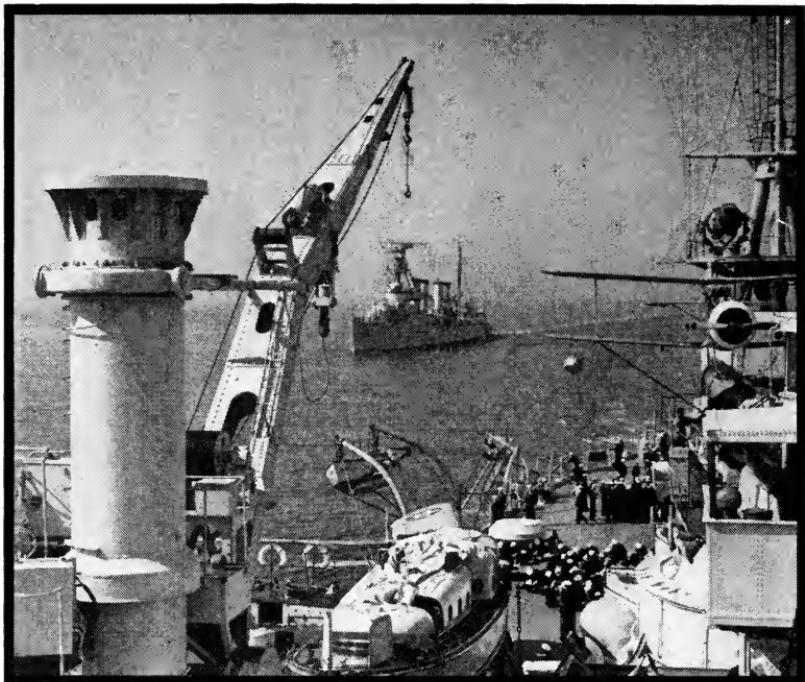


Official U. S. Navy Photograph

The aircraft carrier is really a complete floating landing field, making it possible for its planes to attack the enemy in places otherwise inaccessible

Unlike the battleship, which is a floating fortress, an *aircraft carrier* is highly vulnerable and requires a strong protective force of ships around it, as well as fighter planes above it. The aircraft carrier has a broad, flat deck which makes it simply a floating landing field. It is a fast ship with long cruising range, but that broad deck is an excellent target for enemy bombers, and the carrier's own brood of planes must be ever on the alert to protect it, as well as ready to attack enemy forces or shore installations. The carrier contains shops, equipment, and fuel to take care of its planes. Its crew consists of about two thousand men, commanded by a captain. (Our carriers are named for historic vessels or for famous American battles.)

Next to the battleships and aircraft carriers in size and strength are the battle *cruisers*, ten-thousand-ton giants with greater speed than battleships, lighter armor, and eight-inch guns. They have a



Official U. S. Navy Photograph

In the foreground is the deck of a battleship, the heaviest and deadliest of naval ships, while in the background is one of our Navy's light cruisers

long cruising radius—that is, they can travel far without refueling. Unable to risk a showdown battle with enemy battleships (though the *U.S.S. San Francisco*—a cruiser—not only risked a showdown but won), they are hard fighters against smaller craft. They serve as swift scouts to locate enemy forces, as commerce destroyers, and as protectors of our own commerce. Each carries about a thousand men. A captain usually commands ships of this type.

Light cruisers are smaller than heavy cruisers and mount smaller guns. They also have torpedo tubes. They are useful in fleet actions for breaking up attacks of enemy light craft, and with their torpedoes may even attack battleships or battle cruisers, against whom they could not fight successfully with their smaller guns. Swift, with a long cruising range, they are useful in protecting or destroying com-

merce. A light cruiser, usually commanded by a captain, has a crew of about seven hundred men. Both heavy and light cruisers are named for cities.

Destroyers are the "little tough guys" of the fleet. They range from about 1,200 tons to 1,850 tons, and carry guns of five-inch caliber, or less. An important weapon of the destroyer is the torpedo. Though a destroyer is no match for a larger ship, either in guns or armor, one high-speed dash may give it a chance to fire a torpedo that might sink any ship afloat. Like cruisers, they are sometimes used as scouts, for locating enemy ships, for convoying merchant ships, and sometimes as part of the battle fleet, breaking up enemy attacks and themselves attacking when the chance is presented. They are faster than battleships and cruisers, and can twist and dodge more easily. A destroyer, which carries a crew of about 140 men, is usually commanded by a lieutenant commander. Destroyers are named for officers and enlisted men of the Navy, and for famous public persons.

Ever since World War I, public attention has been focused on *submarines*, those sleek, underwater craft that bear the names of fish. Carrying guns, torpedo tubes, and mines, these fighters can tackle many different jobs. Their most famous use is as commerce destroyers. In both the present war and World War I the German main fleet was largely bottled up in harbors, but their U-Boats ranged far and wide to attack Allied shipping. Submarines are also used to attack enemy warships of all types. The United Nations are fighting a very serious war against these underwater prowlers. An American submarine is likely to be under the command of a lieutenant or lieutenant commander and carry a crew of about sixty-five men.

Not all the ships in a fleet are fighters. Fuel, supplies, repair shops, ammunition, and everything the fleet may need are carried in what are known as auxiliaries, manned by Navy men. Tugs and hospital ships are in this class, as are tenders for submarines and destroyers. With proper auxiliaries to bring supplies from ashore, the fleet can stay at sea for months.

The shore establishments of the Navy include Navy yards, operating bases, training stations, recruiting stations, aviation shore bases, other necessary offices, and laboratories. The Navy yards are used for the building and repair of ships and equipment. Operating bases are designed as the shore headquarters of the fleet from which the strategy of naval war is planned.

Navy Flyers

Aviation is an important branch of the naval service, and a rapidly expanding branch. To find and train the needed number of new pilots, the Navy has a training program similar to that of the Army.

Seamen who are at least eighteen but not yet twenty-seven years old, who can pass both a rigid physical examination and an intelligence test, and are high-school graduates of good character, are eligible for appointment as aviation cadets. Seventeen-year-olds can qualify for cadet appointments but will be enlisted as apprentice seamen before being assigned to cadet training.

"Sailor flyers" are sent to a Naval Reserve aviation station for thirty days preliminary flight training, during which they are paid \$54 a month, plus a dollar a day for subsistence. Uniforms and a \$10,000 insurance policy are provided free. After successfully completing this elementary training, the cadet is appointed an aviation cadet at \$75 a month and is sent to another field to receive additional flight training.

Upon graduation from naval cadet training courses, the cadet is commissioned an ensign and assigned to active service with one of the aircraft squadrons of the battle fleet on the Pacific Coast or with the scouting fleet on the Atlantic Coast. During his active service he receives \$150 a month, plus subsistence, insurance, and a \$250 allowance for his uniform.

Courses for aviation cadets in the Navy are similar to those offered Army flying cadets. Men who do not become pilots are usually trained in the mechanical and technical jobs which are a vital part of all aviation, both military and civil. Appointments to the naval flying service are open to enlisted men who have completed their training as apprentice seamen and are otherwise qualified.

Navy Specialists

We have spoken briefly about the way the Navy is organized. But its organization is much more complicated than it may seem at first. To understand why this is, we must ask ourselves "What is a warship?" The answer is that a warship is first of all a ship. It must be operated by men skilled in navigation and engineering. Experts must stand on its bridge, watch its course, keep track of its location, be on the lookout for storms, collisions, and all the



Official U. S. Navy Photograph

The training of a naval aviation cadet lasts about twelve months and includes physical training in addition to classroom work and flying experience

other dangers of seafaring. Other experts must be at work inside the ship, keeping powerful engines going, fires burning, bearings oiled, and the whole machinery of the ship at all times functioning perfectly.

Then the ship must be kept clean, well painted, neat, and seaworthy. That takes skilled men. The crew must be fed good food. Cooks—more experts! Doctors and nurses must watch over the health of the men. Still more experts. All of this, mind you, is entirely aside from the fighting machinery. The Navy, then, needs many men whose jobs usually are not to fight but simply to run a ship.

In addition to these men, of course, there are the gun crews, operators of complicated machinery which includes both delicate instruments and heavy elevators. Signalmen, observers, and radio

operators are examples of other specialists who are needed to carry on the business of naval warfare.

It is obvious that no one man is likely to become a first-class gunner, a mechanical genius in the engine room, a signaller, and a navigator all rolled into one. Even if one could be skilled in all these things, the Navy could use him on only one job at a time. So Navy men become specialists, working at one branch of work till they become experts.

There are seven main divisions of Navy work, each part in turn being divided into several specialties. The following list gives a few examples of the specialties found in each branch, but it is by no means complete. (For a more detailed list of jobs in the Navy, see page 196.)

Seaman branch. This branch includes the men concerned with sailing the ship (but not running the engines), signalling, and operating the guns. Among the specialists found in this branch are boatswains, gunners, torpedomen, signalmen, quartermasters (in the Navy a quartermaster steers the ship in battle and has other duties; do not confuse him with Army quartermasters), fire controlmen, and seamen.

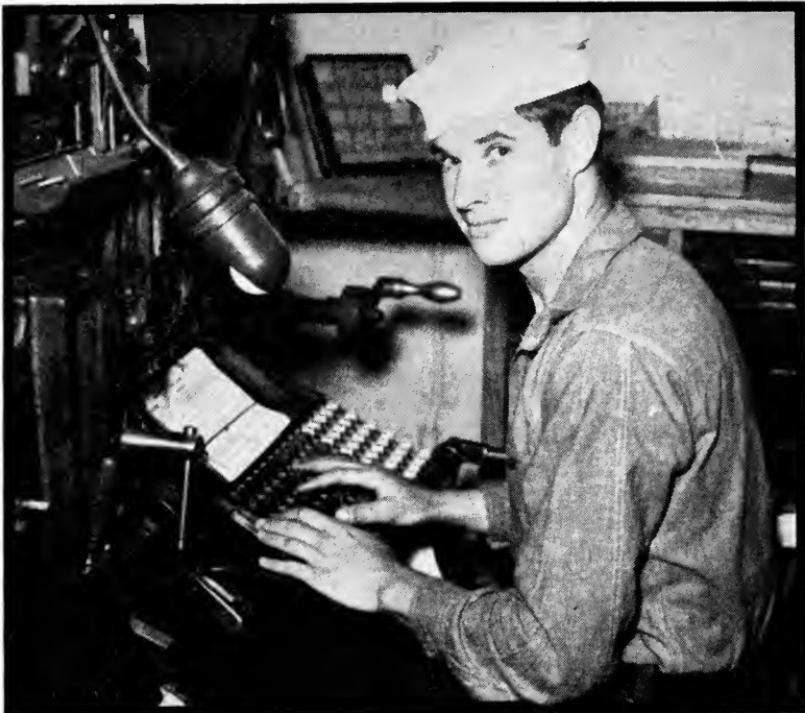
Artificer branch. This branch includes the men who do mechanical work around the ship. It includes such specialists as electricians, carpenters, painters, sailmakers, radiomen, patternmakers, shipfitters, and even printers.

Artificer branch: engineer force. This branch is responsible for operating the ships' engines and for keeping them in good condition. Among the specialists of the engineer force will be found machinists, oilers, water tenders, firemen, boilermakers, and metalsmiths.

Special branch. The special branch is made up of men who do not directly operate the ship. It includes yeomen (the Navy name for clerks), storekeepers, pharmacists, hospital attendants, and musicians.

Commissary branch. This division is concerned with feeding the Navy men. It includes stewards, cooks, and bakers. Closely related to this is the *Messman branch*, which includes officers' stewards, officers' cooks, and messmen.

Aviation branch. This branch, of course, is concerned with the wings of the fleet. In its ranks are pilots, machinists, metalsmiths,



Official U. S. Navy Photograph

The Navy teaches its men trades they can use in civilian life after the war. Here is a sailor at work at a linotype machine on one of our battleships

carpenters, aerographers, photographers, and ordnancemen (gun experts), all specialized for work on or with aircraft.

Though it is no longer possible for anyone but a seventeen-year-old or a selected specialist to enlist in the Navy, the following requirements must still be met by all who wish to qualify for fleet duty. They must be between the ages of seventeen and fifty, at least five feet, two inches tall, with weight proportionate to height. They must be citizens of the United States, in sound health, able to pass an intelligence test, and of good moral character. Negro youth who serve in the Navy are no longer limited to the messman's branch as they were some time ago, but may now qualify for all jobs on smaller naval craft.

Pay in the Navy

As in the Army, there are seven grades of enlisted men in the Navy. Beginners start in the seventh grade, which in the Navy and Coast Guard is known as the rank of apprentice seaman. The first grade includes chief petty officers. This table will show you the monthly pay of petty officers and non-rated men in the various grades.

NONRATED MEN, THIRD CLASS	
Apprentice Seaman	\$ 50 —
Fireman	54
NONRATED MEN, SECOND CLASS	
Seaman, Bugler, Hospital Apprentice.....	54 —
Fireman, Musician	66
NONRATED MEN, FIRST CLASS	
Seaman, Bugler, Hospital Apprentice.....	66
Fireman	78
Musician	96
PETTY OFFICER, THIRD CLASS	78
PETTY OFFICER, SECOND CLASS	96
PETTY OFFICER, FIRST CLASS	114
CHIEF PETTY OFFICER	
Permanent appointment	138
Acting appointment	126

There is a permanent addition of two dollars a month for each Medal of Honor, Distinguished Service Medal, or Navy Cross held.

Temporary additions to the monthly pay of enlisted men include the following: for sea or overseas duty, 20 per cent; when detailed as parachutists, \$50; for submarine or flight duty, 15 per cent; from \$10 to \$30 when designated as divers, plus \$5 per hour while diving in actual operations in depths over ninety feet; from \$1 to \$5 for using arms or performing other special duties.

Longevity pay is added to base pay as follows: 5 per cent of base pay for each three years of service up to a maximum of 50 per cent.

Officers in the Navy and Coast Guard receive the salaries listed in the table below:

<i>Grade</i>	<i>Annual Base Pay</i>	<i>Allowances</i>
Warrant Officer	\$ 1,800	\$1,224
Chief Warrant Officer	2,100	1,404
Ensign	1,800	1,224
Lieutenant (Junior Grade)	2,000	1,404
Lieutenant	2,400	1,584
Lieutenant Commander	3,000	2,016
Commander	3,500	2,196
Captain	4,000	1,944
Rear Admiral	6,000	1,944
Vice Admiral	8,500	1,944
Admiral	10,200	1,944

Pay increases with length of service up to thirty years. However, a chief warrant officer is limited to a total pay-allowance combination of \$5,000, and lieutenant commanders, commanders, and captains are limited to \$7,200.

Officers, like enlisted men, receive a 50 per cent increase in pay if they fly regularly in the service. Certain special jobs, such as aide-de-camp, also bring extra income.

Training Opportunities in the Navy

The Navy has developed a splendid system of education. The overwhelming majority of Navy men take at least one course during their service. For most promotions, hard study in a specialized field is demanded.

Space does not permit a complete outline of the Navy's educational system. Instead, we will confine our discussion to the types of study open to enlisted men who do not have long service behind them.

Naval education begins in the training station during the eight weeks' recruit-training period. Much of this training is, of course, intended to show the recruit the Navy's way of living and doing business. The recruit gets little chance at first to specialize.

After being sworn in, the new recruit receives transportation to the nearest training station. Here he receives his uniform and equipment and is assigned quarters in the barracks. Almost at once his training begins. He learns to salute, to drill, to keep his clothes and his person neat, as well as some of the elements of seamanship. For the first three weeks the recruit (now known as an apprentice seaman) lives apart from the main body of men, in the detention unit. This is quarantine, designed to prevent recruits from bringing in contagious diseases.

Released from the detention unit, the apprentice seaman continues his training for five more weeks at the training station. At the end of that time he can recite the points of the compass, handle himself in a small boat fairly well, and drill passably. He knows some of the signals used and is acquainted with Navy discipline, traditions, and history.

The recruit is permitted, just before the end of his recruit training, to apply for admission to one of the Navy's class A schools. These are full-time elementary trade schools. There are five groups of schools. In Group I are included the electrical and ordnance schools. Group II has the communication and clerical schools, while Group III is composed of schools for machinists, metalworkers, and woodworkers. Group IV includes the aviation schools and Group V the schools of the hospital corps.

There is keen competition for appointment to these schools. The applicants' education, intelligence, mechanical ability, and records are all rated carefully. Admission is by selection. The sailor must prove during his "boot" training period that he has the interest and aptitude to profit from vocational training. Applicants for Group I schools, for example, are tested for mechanical aptitude and knowledge of elementary mathematics, and applicants for Group II are tested in spelling and English.



Official U. S. Navy Photograph

Preparing nutritious, appetizing meals for Navy men is the job of Navy cooks

Class B and C schools are advanced schools not open to newly enlisted men.

Other Navy Education

In addition to the five groups of schools discussed, there are similar schools for buglers and musicians. Musicians from civilian life may qualify for courses in a special band school. If they are transferred out of the school, they return to general duty.

Probably the most common type of naval education is that carried on by the Navy training courses. These courses involve the study of simply written pamphlets, describing the points a man needs to know when seeking promotion to any special position. The courses are issued without charge to enlisted men by their commanding officers, and the officers help the men to study and understand them. They do not take the place of practical experience, but give the man on the job a chance to prepare himself for a better position. Most ratings in the Navy are open only to men who have completed



Official U. S. Navy Photograph

In peacetime, there is ample opportunity for recreation aboard Navy ships. Bluejackets in this picture are sunbathing on the decks of a battleship

specified training courses. Thus a quartermaster, third class, would have to complete the training course for quartermaster, second class, before being promoted to the higher rating.

Some weeks after induction, the recruit is graduated from the training station and sent to the fleet. With his seabag packed with his belongings, he goes to join a ship to which he is assigned. Somewhat later he is promoted to the rank of seaman, second class, or fireman, third class, with a raise of pay.

Annapolis and West Point

As in the Army, there is sharp distinction between commissioned officers and enlisted men in the Navy. The former are better paid

and have a higher social standing. They are more carefully selected and must go through a longer training period.

Normally, the way to become a regular naval or Army officer is to take the four-year course given at the United States Military Academy at West Point or at the Naval Academy at Annapolis. Now, however, most of the officers in both branches are likely to be men who have worked their way up from the ranks through officers' training schools or specialists whose special qualifications have entitled them to commissions upon enlistment.

At West Point, students rank as cadets and serve under appointment by the President. To secure such an appointment, the young men must first be nominated by their congressmen, senators, or territorial delegates. (The same is true for Annapolis appointees.)

Candidates for admission to the Academy must be between the ages of seventeen and twenty-one, inclusive. They must be single, and pass a rigid physical examination and a stiff mental test. College students may sometimes secure admission without taking the mental test by presenting proper certificates from college authorities. Upon graduation, West Pointers are commissioned as second lieutenants in the regular Army.

Requirements for entering Annapolis are the same as those for West Point. The new midshipmen join the Navy, secure their uniforms, and are assigned to quarters. Their pay is \$780 a year. Each pays a \$100 deposit and is credited with \$250 more to cover the cost of uniforms and other equipment, including textbooks. This \$250 is deducted from his pay in monthly installments.

On graduating from the Naval Academy, the midshipman is commissioned as probationary ensign in the Navy, or as second lieutenant in the Marine Corps. During his first seven years' service, his commission may be revoked at any time, and he may be dropped from the service.

Although the Marines, the Coast Guard, and the Merchant Marine are under the jurisdiction of the Navy, particularly in wartime, they are, nevertheless, sufficiently distinct to require special discussion in a separate chapter which follows.

7. JOBS FOR BOYS IN THE MARINES, COAST GUARD, AND MERCHANT MARINE

The Marine Corps

THE MARINE CORPS is something of a military hybrid. Although it is a unit of the Navy, most of its battle work is done on land, and marines may even be detached from sea service and go into battle alongside the Army. That is why marines are called soldiers of the sea. They are the most complete fighting men in the world. Though ordinarily limited in size to about one-fifth the size of the Navy, by the end of 1943 there will be 400,000 Devil Dogs in Uncle Sam's service.

Their duties fall into four general groups. They garrison the Navy yards and naval stations in the United States and in outlying possessions; they form detachments as part of ships' crews on aircraft carriers, battleships, and cruisers; they are a part of the United States fleet which is always ready for shore landings; and, in peace-time, they protect American lives and property abroad.

Wherever there is any overseas trouble, the members of the United States Marine Corps are the first to get there. Marines are trained to land quickly and to begin immediately to fight. Our nation, time after time, has paid tribute to the gallant work of our fighting marines. In this war we have witnessed their heroic stands at Guam, Wake Island, and Guadalcanal. Perhaps you have seen some of the interesting motion pictures about the marines which have been showing lately.

Only citizens of the United States are eligible for the Marines, and each one must be between five feet, four inches, and six feet, three inches tall, with weight in proportion. As in the Navy, enlistment has now been halted, except for boys seventeen years old and selected specialists.

Of the seven branches of marine service—aviation, mess, musician, paymaster, quartermaster, signal and radio, and line, only the latter needs a word of explanation. The line branch of the marines comprises those members of the corps who are on general duty on ship and on shore, distinguished from the other, more specialized branches.

Pay scales for enlisted members of the Marine Corps fall into seven groups also, as follows:

<i>Grade</i>	<i>Monthly Pay</i>
Private (7th grade).....	\$ 50
▲ Private, 1st class, or assistant cook (6th grade)....	54
▲ Corporal, mess corporal, or field cook (5th grade)..	66
▲ Sergeant, mess sergeant, or chief cook (4th grade)..	78
▲ Staff sergeant or platoon sergeant (3rd grade).....	96
▲ First sergeant or technical sergeant (2nd grade)....	114
Sergeant major or master technical sergeant (1st grade)	138

Because marines are expected to be "crack shots" with a rifle, the Corps encourages its men to strike for sharpshooter and expert rifleman ratings by paying qualified men special bonuses. Qualification as sharpshooter adds \$3 to monthly pay; expert rifleman rating adds \$5 extra each month. These ratings hold for a period of one year only and a marine must requalify to continue receiving additional pay.

Battleship duty and skill in handling various types of guns also pay from \$1 to \$5 a month extra.

As can readily be seen from the rank titles above, Marine Corps ratings correspond very closely with those in the Army. This resemblance holds for officers as well as enlisted men. For a look at salaries paid to Marine Corps officers, turn to page 57 and re-examine the table of Army officers' earnings.

Marine Education

No marine knows where he will be stationed next. Consequently, he cannot go to school in the normal way while on station. Because marines are always moving around so rapidly, they usually receive special training by correspondence through a headquarters such as the Marine Corps Institute in Washington, D. C.

In addition, marines may be assigned for advanced training to certain specialized marine schools, such as field telephone, radio



U. S. Marine Corps Photo

The Marine Corps trains its men for combat under all conditions, in all climates and places, on board ship and on land. Carefully picked for their bravery, stamina, and fighting ability, our marines are "smart and tough"

operator, fire control, optical, radio material, aviation, photography, aerography, field service, signal corps, armorers', clerical, motor transport, quartermaster, engineers, and telephone electricians' schools. Some marines may also go to the Army and Navy service schools in order to prepare to become officers.

The basic gun of the marines is the rifle, and thorough training in its use is part of every marine's education. The marines also have a complete line of weapons extending from the automatic rifle, machine gun, and trench mortar to artillery, tanks, airplanes, anti-tank, and anti-aircraft guns. Parachutists and air-transported battalions are part of the marines' offensive equipment, and observation planes, bombers, and fighters are included among marine fighting airplanes.

The marine recruit begins his service at either San Diego, California, or Parris Island, South Carolina, for six to eight weeks. The

first three weeks he studies drill, military courtesy, the Orders of the Marine Corps, and discipline. But he spends the rest of the training period on the rifle range.

The Marine Corps has set up no definite educational requirements for enlistment, but applicants must be able to pass a mental examination. In one study, it was found that a third of the men accepted were high-school graduates; half the recruits had at least some high-school training; about 5 per cent had some college training.

Like the Army and the Navy, the Marine Corps has certain definite trade needs. If a prospective marine has obtained training in any of these much-needed areas of work, his chances of receiving an immediate improvement in grade and rank are likely to be much greater.

The Coast Guard

So many of the duties of the United States Coast Guard are



U. S. Marine Corps Photo

The rigorous training given the marines makes them second to none among the world's fighting men, a fact for which Guadalcanal's Japs will readily vouch

connected with the Customs Service that in peacetime the two are under supervision of the Treasury Department. When war comes, however, the Coast Guard is transferred automatically to the jurisdiction of the Navy because of the vastly increased patrol work necessary in coastal waters.

The Coast Guard strength is expected to reach 300,000 enlisted men by the end of 1943, almost fifteen times its normal peacetime roster. Its activities are as many and varied as the complexities of shore work demand, comprising maintenance of cutters, air force, lighthouses, patrol boats, lightships, ice patrol, buoys, disaster-relief service, weather patrol, ice-breaking service, shore stations, communication network, sea patrol, and radio beacons.

Enlisted men in the Coast Guard as in the Navy begin with the rating of apprentice seaman. Requirements for applicants are: seventeen to forty-five years of age; good character and record; weight in proportion to height; ability to read, write, and speak the English language; possess at least a grammar school education; and ability to pass a rigid physical examination.

Petty officers serve in various branches, such as seaman, artificer, special, commissary, and aviation. Nonrated men serve in the seaman, artificer, and special branches. Pay schedules for officers and men are the same as those in the Navy. (Note again pages 68 and 69.)

Coast Guard Education

Like all other branches of the armed forces, the Coast Guard offers its men many opportunities to study while in the service. The Coast Guard has its own academy at New London, Connecticut, and provides courses by correspondence through the Coast Guard Institute. In addition, there are service schools which offer free courses for gas and Diesel engine specialists, radiomen, yeomen, cooks and bakers, aircraft engine mechanics, armorers, and in radio engineering and material.

For his first three months of training the recruit goes to one of the Coast Guard training stations, such as Curtis Bay, Maryland; Port Algiers, Louisiana; and Port Townsend, Washington. After preliminary training the apprentice goes to sea on a cutter and after four months' apprenticeship he is advanced to seaman second class. This grade lasts for three more months, when he is



Coast Guard Photo

This color guard standing attention at a Coast Guard depot represents an age-old ceremony cherished by all of the men of the American Coast Guard

ready to begin some kind of specialization. (As in the Navy, job specialists are at a premium in the Coast Guard. Look again at pages 64, 65, 66, and 67.)

The Merchant Marine

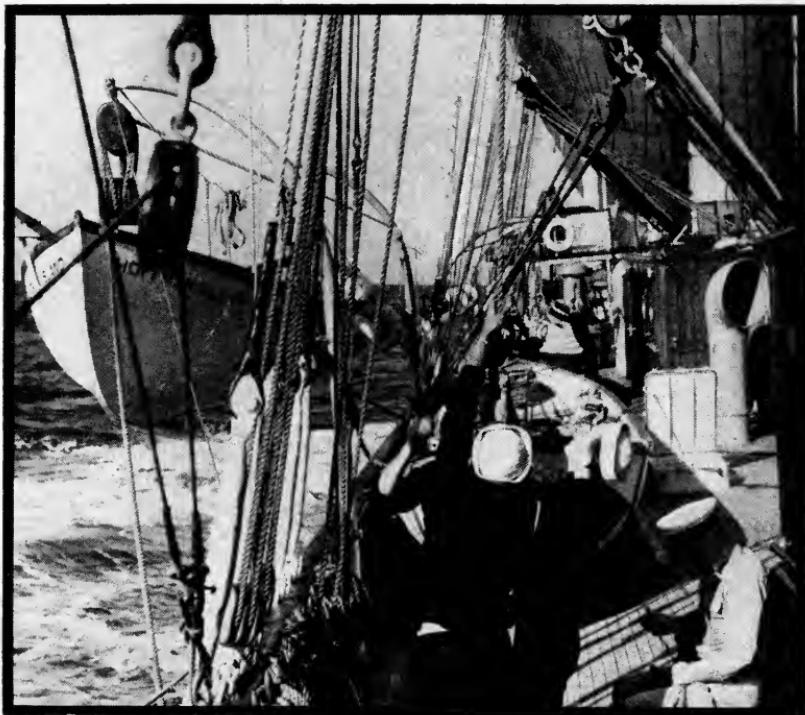
The men who sail the seven seas in war and peace are members of what is called the Merchant Marine, or more recently, the Maritime Service. They are the ones who do much of the nation's work at sea, take untold risks in wartime, yet receive few of the rewards of glory which go to members of the armed forces. They are not in the military forces; yet, since the beginning of the Republic, the sailors on the whalers and merchant ships, and the fishermen were the ones who bore the brunt of sea blockade and warfare. And in keeping with their long tradition, the merchant crews, from master down to messboy, are getting the war material through to our forces abroad and our Allies, regardless of risk and cost. Now, too, our merchant ships are armed to give them some protection against the enemy.

Because the Merchant Marine was allowed to decline greatly after the last war, the United States Maritime Service was organized in 1936 to begin a hugely expanded American shipping program. To this program, President Roosevelt added his call for eighteen million tons of new shipping during 1942 and 1943. The quota of eight million tons was exceeded during 1942. By the end of 1943 it is expected the Merchant Marine will have nearly three thousand ships.

To sail the ships of our expanded Merchant Marine, we will require 30,000 deck and engineer officers, and about 140,000 seamen in the service before 1943 is past. As in the Army, Merchant Marine officers frequently can rise from the ranks by attending special officers' training schools maintained by the Maritime Service. The pay of a licensed officer varies with the type, the trade route, the tonnage, and the power of his vessel.

Newcomers who have just enrolled in the Maritime Service receive \$50 a month during their probationary period, plus the keep, clothing, and instruction books needed while in school. Seamen in the Merchant Marine usually earn an average of \$100 to \$115 a month, with food and quarters furnished.

Cadets studying to become officers in the Merchant Marine Academy receive \$65 a month, plus keep, the same rate as a midshipman at the Naval Academy. While in training aboard ship, cadets also are paid at least that amount by the private owners of



U. S. Maritime Service Photo

The men in the Merchant Marine, working under hazardous conditions, must deliver the materials of war to our troops abroad and to our allies as well

the ships. A third officer or third assistant engineer receives from \$180 to \$300 a month with quarters and subsistence furnished by the steamship company employer. Commanding officers of great passenger liners may receive \$7,500 or more a year, with the lower grades paid proportionately. In addition, all crew members are given fat bonuses for trips through dangerous waters.

Merchant Marine Education

Cadets in the Merchant Marine Corps receive their basic ten weeks' preliminary training at cadet schools in New York, California, and Mississippi, after which they spend thirty weeks at the Merchant Marine Academy, King's Point, New York. The remaining



U. S. Maritime Service Photo

Included in Merchant Marine training is a thorough course in first aid care of the injured, so that men can care for any casualties that occur at sea

six to eight months of training are spent aboard merchant ships. Thereafter they are sent to sea for from six to eight months. They are then ready for their examinations as third mates or third assistant engineers. Young, unmarried, male citizens seventeen and a half to twenty-three years of age are eligible for cadet training if they have had three units of English, and one of science and mathematics in high school. A maritime cadet must be of sound constitution with 18/20 vision uncorrected in each eye. He must have a minimum height of five feet, five inches, and a maximum of six feet, four inches. All officers and men in the Merchant Marine are exempt from Selective Service.

In this service, too, correspondence courses are made available to all enrollees through the Coast Guard Institute at New London, Connecticut. By taking these courses, enrollees can prepare themselves for advancement in the service. The five state Maritime Academies of California, Maine, Massachusetts, Pennsylvania, and New York also train maritime officers. These state institutions receive federal aid.

After a year of service as third officer or third assistant engineer, the former cadet will be eligible for examination for second officer's or second assistant engineer's license. If successful, and after a year's service as second officer or second assistant engineer, he will be eligible for examination for a first officer's or a first assistant engineer's license. After a year's service as first officer or first assistant engineer, the former cadet will be eligible for examination for a master's or chief engineer's license.

General Entrance Requirements

Landlubbers are now eligible for the merchant marine. Physical standards for officers' training, and for men and boys who desire to enter the service with no former experience are similar in strictness to those for entrance into the Navy. For ordinary seamen with shipping experience, physical standards are less strict, although a major physical defect will cause their rejection.

Age requirements for entrance vary with the applicant's experience. In the experienced-seaman group men and boys from 17 to 40 who have held jobs on ocean-going or coastwise vessels for no less than three months out of the past three years are eligible. Men without experience and otherwise acceptable for training must be between 17 years, 9 months, and 35 years, 6 months of age. American citizenship is a "must" for all seamen, and cadet candidates must be citizens of at least ten years' standing.

Applications by experienced seamen are welcomed by local offices of the United States Employment Service or the War Shipping Administration's (WSA) Recruitment and Manning Organization. Inexperienced men and boys apply at local enrolling offices of the U. S. Maritime Service.

8. JOBS FOR GIRLS IN THE ARMED SERVICES

Women in the Service

EACH NEW WAR in modern times has seen an ever-increasing drain on America's manpower. As women have achieved greater independence and higher living standards in their civilian life, they also have taken a larger part in the war efforts of our nation.

In World War I women performed heroic services as nurses both at the front and behind the lines. They also organized semi-military groups, such as the Navy's Yeomanettes, to do some of the less technical military work and to help improve the morale of the fighting forces by serving at canteens and relief centers.

But this new war has seen women for the first time stepping into the places of men in the armed forces to release men for more strenuous duties elsewhere. The lead has been taken by our Russian allies, where there are now some thirty million women helping the Russian war effort, not only behind the lines, but in the fighting forces themselves. They even serve in the deadly guerilla bands that roam through enemy-held territory.

Women in the United States are now being admitted to the armed forces, but only for noncombatant duty. The time may yet come when American women will have a chance to get in the fight, as in England, where women are already manning antiaircraft guns at defense posts throughout that island fortress. But American women for the time being are permitted only to perform detail work which will allow the men now in those positions to take over more active duty.

The nurses corps of the Army, Navy, and Marines have been hard at work for so long that they are hardly considered as news any longer. More than 160,000 women were in civil service jobs in the Army and Navy early in 1942. But during that year many new women's auxiliary groups were organized: the Women's Army Auxiliary Corps, the Women's Volunteer Service of the Naval Reserve, the Women's Auxiliary Ferrying Squadron, and the Women's Coast Guard Auxiliary—nicknamed the WAACs, the WAVES, the WAFS, and the SPARS (who take their nickname from the Coast Guard's



Taking the organization of the WAAC as a challenge to their abilities, the women have proved beyond a doubt that they can do a creditable military job

motto "Semper Paratus," meaning "Always Prepared." In 1943 the Marine Corps Women's Reserve was founded. Because their numbers

and their service will broaden as the war continues, we will need to discuss these military auxiliaries in some detail.

The WAACs

At first the nation was prepared to snicker when the suggestion was made that we should include women in our armed forces. In fact, the Army's women were promptly dubbed the "wacky WAACs." But that was before the WAACs dug into their studies with an energy and perseverance which amazed even hard-bitten old soldiers who were assigned to instruct them. These feminine soldiers' aides are now being assigned to increasingly important positions, proving that they can give the kind of service the nation needs in wartime.

The WAAC was organized May 14, 1942, with headquarters at Fort Des Moines, Iowa, and a recruitment quota of 25,000 women for the entire corps. This quota has since been raised to 150,000. Their course at the Fort lasts six weeks, during which time they must complete such courses as aircraft spotting, motor transport, Army cooking, use of civilian and military maps, leadership, company administration, and property accountability. They must also prove themselves able to take—and like—the ways of Army life, and be emotionally able to stand up under the strain of constant routine, lack of privacy in barracks life, and vigilant surveillance by superiors.

Fort Des Moines has a capacity of 4,400 WAACs. In addition, the WAACs now have three Des Moines hotels in which 2,000 auxiliary specialists are taken care of. Other training centers have since been organized throughout the country.

Applicants for the WAACs must be citizens of the United States, between twenty-one and forty-five years of age, have two years of high school, pass an intelligence test, and be physically fit. Minimum height is five feet, maximum six feet; minimum weight is a hundred pounds, and height and weight must be proportionate to age.

Every applicant accepted is enrolled as an auxiliary. As the Corps expands, each member has equal opportunity to be selected for officers training school on the basis of all-around performance and ability. Service is for the duration of the war and for not more than six months thereafter. Corps members receive thirty days' leave of absence a year. They can serve overseas.

Pay for the WAAC

Although the organization of the WAACs is similar to that of the Army, the titles of their ranks are different. An auxiliary is equivalent to a private; a junior leader to a corporal; a leader to a sergeant; a first leader to a first sergeant; a third officer to a second lieutenant; a second officer to a first lieutenant, and a first officer to a captain.

Their pay scales are as follows:

Auxiliary	\$ 50.00
▲ Auxiliary, 1st Class.....	54.00
▲ Junior Leader	66.00
▲ Leader	78.00
▀ Staff Leader	96.00
▀ Technical Leader	114.00
▀ First Leader	138.00
▀ Third Officer	150.00
▀ Second Officer	166.67
▀ First Officer	200.00
✿ Field Director	250.00
✿ Assistant Director	291.67
✿ Director	333.33

In addition, officers receive a subsistence allowance of seventy cents a day and, if quarters are not furnished, an allowance ranging from \$45 a month up to \$105.

Some of the specific jobs which the WAACs are taking over from the boys in khaki are those of typists, telephone operators and workers in other forms of communications, clerks, laboratory technicians, librarians, bookkeepers, hygienists, dieticians, and cooks. For a more complete list of jobs open to the WAACs and the WAVES, see page 201.



Official U. S. Navy Photograph

The WAVES are an integral part of the United States Naval Reserve, and members of this service enjoy the same status as naval men of equivalent rank

Applicants for the WAACs may go to any Army recruiting office for information and application blanks.

The WAVES

No pretense was made in the Navy of considering its new source of recruits, the women, as merely auxiliaries. The WAVES are the Women's Reserve of the Navy, with the same importance and classification as the Naval Reserve. The work they do is similar to that of the WAACs in the Army. Their uniforms are similar to regular Navy uniforms, and their pay is the same as that earned by Navy enlisted men and officers.

At first the quota of WAVES was limited to 1,000 officers and 10,000 enlisted women to be filled in this way: The top-ranking officer is a lieutenant commander, who commands 35 lieutenants. The rest of the 1,000 officers who are older than thirty-one will be lieutenants junior grade (about 350); those under thirty-one being classed as ensigns (about 614). Age limits for officers are from twenty to fifty years, for enlisted women twenty to thirty-six. Early in 1943 the limit on the number of WAVES to be recruited was set at 47,500.

Educational requirements are high for midshipwomen (officer candidates): either a college degree, or two years of college and at least two more years of professional or business experience applicable to naval jobs. Such education must include at least two years of high-school or college mathematics.

Officers' training is held at Smith College, Northampton, Massachusetts, and training schools for enlisted women are at the University of Wisconsin, where several hundred women take special training in radio communications; at Indiana University where six hundred yeomen are being trained, and at Oklahoma Agricultural and Mechanical College where another five hundred enlisted personnel are being taught in successive groups.

WAVES' Applications

The applicant for the WAVES cannot just drop in at a Navy recruiting office (as the WAACs may do for the Army) and apply immediately. She must write or go instead to the Director of Naval Officer Procurement in her district, requesting application blanks. If her application is acceptable she will receive an appointment for interview and examination.

If accepted for enrollment in the officers training school, she is

placed on probation for a month as an apprentice seaman. If she is found unsuitable for officer work she is given a choice of returning to civilian life or applying for enlistment in whatever capacity in the WAVES her qualifications will permit.

If she survives the month's probation, she is appointed a reserve midshipman and three months later becomes an ensign if her work continues to be satisfactory. While a reserve midshipman she may not marry if she was single when she enrolled. After enlistment as an apprentice seaman, she is given another month's training. Then, if qualified, she will receive further training to fit her to become a specialist.

When she becomes an officer, a member of the WAVES receives the same insignia, stripes, and salute etiquette which her fellow officers among the men receive, and she is expected to respect naval etiquette quite as carefully as any other naval officer.

Pay for the WAVES

While in training, enlisted women receive \$50 a month, plus maintenance. When training is finished their pay depends on the rating they obtain. The base pay according to rank is given in the following table:

	Apprentice seaman	\$ 50
	Seaman, second class	54
	Seaman, first class	66
	Petty officer, third class	78
	Petty officer, second class	96
	Petty officer, first class	114
	Chief Petty Officer, acting.....	126
	Chief Petty Officer, permanent.....	138

Since most enlisted women live outside regular naval quarters they receive additional rental and food allowances amounting to about \$82.50 a month. (For officers' earnings, see page 69.)

Minimum height requirements for WAVES is five feet; minimum weight ninety-five pounds; and minimum Navy standards of 12/20 for vision must be met.

Particularly desirable for general work in the WAVES are radio operators, teletype operators, clerks, secretaries, stenographers, typists, file clerks, bookkeepers, and operators of simplex, multiplex, and duplicating machines. Thus, vocational and commercial preparation while in high school can greatly increase one's chances of acceptance in the WAVES. For the more technical divisions there is great need for meteorologists, physicists, laboratory experts, radio engineers, assistant plant managers, cryptanalysts, code and signal workers, and executives. In addition, there are light types of aviation jobs WAVES can do, including link trainer instruction, control tower watching, parachute rigging, ground work, and photography.

The WAFS

Perhaps the least publicized of the women's groups is the WAFS (Women's Auxiliary Ferrying Squadron), a division under the Army Air Force. The WAFS have the tough, tricky job of picking up Army planes and flying them cross country to any Army air field in the United States. WAFS have civilian rather than military status, and their members come from our quota of more than three thousand women pilots. As in Great Britain, our women flyers may soon be flying every type of combat plane except the huge four-motored bombers. Early plans were that WAFS would not fly beyond our national shores, but as their experience increases and the need rises, they may be detailed to transoceanic ferrying work.

Only expert women flyers can expect to make the grade and become members of the WAFS. Requirements call for women between the ages of 21 and 35; each candidate must have a high-school education or its equivalent as well as proof of 35 hours of previous flying experience. In addition, candidates must pass a personal interview with an authorized recruiting officer and a strict medical examination by an Army Flight Surgeon.

Only those recruits successfully completing training under the Women's Flying Training program may serve with one of the four WAFS units. During training candidates receive \$150 a month.

Because their work is so specialized and technical, these requirements and the pay the WAFS receive are vastly different from the requirements and pay of the WAACs and the WAVES. While on civil service status, WAFS earn the comfortable salary of \$3,000 a year, plus \$6 a day for expenses while on flying missions.

The SPARS

Not to be outdone by the Navy, the Coast Guard formed its own women's auxiliary service late in 1942 (quota: 8,000). The SPARS perform work similar to that of the WAVES. They are stationed at shore establishments, where they handle jobs formerly done by coast guardsmen, thus relieving men for fight duty.

The SPARS are headed by a lieutenant commander and eighteen other officers with the rank of lieutenants. Enlisted women and officers hold the same ranks as enlisted women in the WAVES and receive the same pay.

The Marines

The Marine Corps was the last fighting army to open its ranks to women. At marine posts and stations in the United States, women marines will fill jobs similar to those held by the WAVES. "Lady Leathernecks" will receive the same rank pay as men.

To fill the quota of 1,000 officers, women with a college degree or two years of college and two of business or professional experience and who are between the ages of 20 and 50 are needed. To meet the quota of 18,000 enrolled members, the women marines are calling for applicants between the ages of 20 and 36 who have completed at least two years of high school or business school. Apply through the nearest office of Naval and Marine Corps Officer Procurement. (See pages 57 and 75.)

The "Lady Leathernecks" will take six-weeks' basic training in schools already established for the WAVES. Marines with civilian work experience will be assigned to duty after this training; those without such experience will be sent to training schools.

The Nurses

The only way to become a nurse in the armed forces is to be a nurse first. The armed forces do not conduct nursing schools, but recruit their nurses from among civilians. To become a nurse for Uncle Sam, a woman must first have graduated from an approved nursing school and must have all the physical and mental qualifications which the armed forces require. She must also be a registered nurse (RN), and preference is given to the applicant who is an enrolled Red Cross nurse.



Official U. S. Navy Photograph

Navy nurses are commissioned officers. Some have been serving in the Navy for many years. Their uniforms are different from those designed for WAVES

Before being sent to any foreign duty, a new nurse in the armed forces serves a varying period in hospitals within the national borders to accustom her to Army and Navy methods. Army nurses begin with the relative rank of second lieutenant, with chief nurses ranking as first lieutenants, assistant superintendents of nurses ranking as captains, and superintendents ranking as majors. With their

relative rank they receive specified privileges, such as use of the officers' clubhouse and recreational facilities.

The Army Nurse Corps

The Army Nurse Corps first began to operate during the Spanish-American War, and in 1901 became part of the Medical Department of the Army. In April, 1917, there were only 403 nurses in the Corps, but by the end of the first world war there were nearly 22,000.

Nurses are appointed to the Corps by the Surgeon General with the approval of the Secretary of War. Each nurse must agree to serve at least three years, the first year of which is usually spent in this country before being sent out to any kind of foreign duty. Promotions are based on length of service and special examinations and qualifications.

Room and board are included with all pay schedules for nurses, which are exactly the same as those paid Army officers. A nurse may be retired with pay after thirty years of service, or after twenty years of service if she has reached the age of fifty years. Her retirement pay is based on 3 per cent of her regular pay, multiplied by the number of complete years of service. A nurse may also be retired for disability incurred in the line of duty at 75 per cent of her base pay at the time of the disability. In either kind of retirement, the retirement pay is for life.

The Navy Nurse Corps

Like their sisters in the Army, Navy nurses must be registered nurses before they can join the service, and they must have graduated from an approved school of nursing. The enlistment age is between twenty-two and twenty-eight.

The Navy nurse's first assignment to duty usually is to a station as near home as possible. Her first six months are considered as a probationary period during which time her appointment may be revoked if she fails to measure up to naval standards. Her first appointment is for three years, and she receives the same pay as male Navy officers who hold comparable rank.

Navy nurses may serve in the continental United States, at overseas bases, or on hospital ships, depending upon the needs of the service. After three years' service a nurse may take special courses in anesthesia, dietetics, instruction, and physical therapy. She may

also train the hospital corpsmen who serve on combat ships of the Navy.

Also like their Army sisters, Navy nurses hold various officer ranks, ranging from ensign up to lieutenant commander, with respect and responsibilities of Navy etiquette which go with similar rank for Naval officers.

The Red Cross

Although the peacetime activities of the Red Cross are nearly as well known as its wartime labors, the organization actually was created to serve in wartime to lessen some of the horror of war. In 1911 the President of the United States designated the Red Cross as the only volunteer agency permitted to render nursing aid to the armed forces.

For this reason, no nurse is accepted into the Red Cross who is unwilling to serve anywhere in time of war. Likewise, no nurse is accepted who is not a graduate of a recognized school of nursing. This is done to ensure high professional quality in the ranks of the Red Cross Nursing Service. Red Cross nurses must be citizens between twenty-one and forty years of age, unmarried, and physically fit.

The Nursing Service itself has an enrollment of between twenty thousand and thirty thousand, depending upon the needs of the times, but in wartime, the Red Cross carries huge rolls of volunteer workers and members numbering at present about fifteen million American people. We are all familiar with the Red Cross drives and have read about the volunteer service that many Americans give—rolling bandages and contributing to blood banks.

Unemployment in nursing is rare even during depression periods, provided one is willing to go where the need is greatest and is dedicated to true service of mankind. But because the requirements of the Red Cross are even more strict than regular nursing, the call for additional members in the Nursing Service is urgent at almost all times.

There are other kinds of nursing which are nearly as valuable in wartime as Red Cross nursing, but they are noncombatant in their duties and will be taken up in Part III, which discusses jobs on the home front. You will find a discussion of medical jobs for women on page 113 and a picture of nurses on page 114.



PART THREE

WORKING FOR VICTORY

9. SERVICE ON THE HOME FRONT

Why the Home Front Is Important

THE GAIT of wartime America is the snappy, swinging step of a fighting nation. The young people still in school must adjust themselves to that gait, because they can plan no plans and dream no dreams that will not be vitally affected by the outcome of the war. Every American has just one job today—working for victory.

Every healthy boy who is eighteen or over is slated for fighting duty. Every girl now in school is a potential war worker. There is no excuse for any American squandering his energies on activities that do not contribute to victory or to preparation for victory. The government will not tolerate such waste of manpower.

But wars are not fought with guns alone. The men and women who work on the home front—at machines, at typewriters, at desks, in the fields, in the classrooms—have a wartime responsibility as urgent as the men at the fighting front. This is a war of materials, a war in which bullets and bombs and tanks and planes are eaten up at a terrifying rate. This is a war of food and supplies. To win it we must have the co-operation of the farmers and factory workers.

Finally, this war is a war of men and women who know how to work. Before we are through, we may have as many as 25,000,000 war production workers alone. Thus, the issue for every American is clear. Those who are called will fight. Those who remain at home will work. All will serve where they are needed most.

Where Do You Fit?

As long as the war lasts, there will be a job waiting for every American student when he leaves school. How important that job will be depends on the student himself. His own qualifications, his skills, his training will determine where Uncle Sam will place him.

Where will you fit when your number is called? Where *can* you fit?

To make the greatest possible contribution when your chance comes, you will need to map out a real training campaign. You will need to study your own abilities and aptitudes in relation to the nation's needs. There are many things you will need to know and do before you can single out a spot in the war program and say, "This is my place to serve. This is where I fit."



Chicago Public School Photo

The problem of finding your place in the war program requires careful study and an analysis of your talents and abilities so they can be put to best use

You will need to plan for the future in the light of our national plans for the future. For the time being, every boy should consider himself as in the armed services. With but few exceptions, all boys will be inducted for service soon after they reach the minimum fighting age of eighteen. Many will volunteer at seventeen. This means that most American boys will have to postpone their peacetime career dreams for the duration and buckle down to mastering the fighting



N. Y. A. Photo

The girls will have to do the job on the home front—it may be keeping house or it may be actual production work in a factory making war supplies

tools of war. Girls for the most part will be concerned with home front war work, and it is to them that much of the following is addressed.

What Is Happening on the Home Front?

The first step a student must take in planning his war service campaign is to examine the over-all job picture as it now looks and as it promises to look when he leaves school. Briefly, the picture is this:

If you refer back to the graph on page 25, you will see that by the end of 1943, we will probably have an Army of some 8,055,000 men

and a Navy of 2,000,000. The other fighting branches will have enlistments of 700,000 more. Our war industries will employ at least 20,000,000 workers. Add these figures together and you will see that the immediate wartime demand for fighters and workers reaches a staggering total of more than 30,000,000.

Where are those workers to be found?

During 1942, when the nation needed ten million new workers for its war industries, it obtained them by drawing some seven million from non-war industries and the balance from among the unemployed, and from new workers—mostly women and young people entering the labor market for the first time.

This year, however, the solution is not quite so simple. The large reserves of labor available in our country are being exhausted rapidly. At the beginning of 1942, for example, there were nearly four million Americans out of work. By the end of that year, the figure had dwindled to considerably less than two million, and many of these people were virtually unemployable because of disabilities. Add to that the fact that war industries cannot count on recruiting high-school boys when they graduate, and it is obvious that we will have to find a way to smash the most serious labor bottleneck in its history.

What, then, is the solution?

There are several possible plans for solving this problem, but recruiting more woman-power holds first place in all of them. At the end of 1941, there were only a half million women in war work—less than 10 per cent of the total number so employed. During 1942, however, three million more women went into direct war industry work, and this year they are shouldering an even larger burden. By the beginning of 1944, at least six million women must be in direct war work if our production program is not to bog down. It is expected that about one-third of all the war workers in the country will be women if the war lasts that long.

On January 1, 1943, there were just over fourteen million working women in the United States. While this represented a substantial increase of more than two million* over January, 1942, it is small compared to the number of new women who must go to work during 1943—*five million* in all.

The figures have special significance for every girl of sixteen or over who is still in school. No longer can the patriotic girl work or

*An additional million women shifted from civilian to war work.

not work as she pleases. Now there is only one course open to her: she *must work*. She must either find a job producing goods directly for war, or she must find some civilian job where she can take the place of a person who has transferred to more direct war service.

The responsibility for keeping war goods flowing is not hers alone, however. Before victory is attained, it is certain that hundreds of thousands of housewives and mothers will be on the assembly lines beside her. It cannot be emphasized too strongly that this is every American's war, and that it will be won only through the efforts of every person serving where he or she is best fitted to serve.

The World of Work

Because the manpower shortage is daily becoming more critical, it is important for us to make a careful examination of the job which confronts every American on the home front of this war. What specific occupations are calling for more workers? Where are the labor shortages most serious? Where can youth step in to fill the gaps? What, in short, is the job outlook?

Our country has a giant labor army earning its living from all kinds of common and uncommon trades. From the corporation executive down to the charwoman who empties his wastebasket, each worker plays his part in keeping our great nation on the move. A Pittsburgh steel worker pouring molten metal into casts, an Alabama tenant farmer picking cotton, a Chicago butcher trimming beef, the policeman, the baker, and the paper boy—all these and millions of others are the tiny patches which fill out the crazy quilt of working America.

In ordinary times, the schools and colleges of America produce about 1,750,000 young men and women who enter the job market every year. For the duration of the war, this annual figure will probably be closer to 2,500,000. They number at least 600,000 more than the older people who died or retire annually. The young people shuffle about, trying to find their right places from among the 18,000 different ways to make a living in the United States.

This is the employment picture in an ordinary year. The picture that greets the class of '43 and succeeding war classes is vastly different, however, from that which greeted their predecessors of a few years ago. Many hundreds of these 18,000 jobs have already been closed for the duration. Others, formerly slumping, now offer brilliant opportunities. The whole job world has been turned topsy-turvy.

10. WHERE THE JOBS ARE

Fields of Work

IN A BRIEF BOOK of this sort, it is impossible to present a detailed picture of the wartime world of work. We can, however, highlight certain important features of the job situation today and arrive at several instructive conclusions from that highlighting. Let's look first at some of the fields of work which have been skyrocketed to top positions by the war.

Manual Workers

Without question, manual workers—skilled, semi-skilled, and unskilled—make up the most important class in our working society today. These “overalls and apron” workers include over half of the workers in the country. They are the foundation upon which the national economic skyscraper rests. To a large extent, they are the men and women who are today turning out the tools of war.

Jobs for manual workers, skilled and unskilled alike, are plentiful. In the skilled trades—such as tool designing and precision machining—there is already a serious shortage of workers. And even the “muscle trades” of common labor around factories and on building jobs are greatly undermanned. It is estimated that something like two-thirds of all war workers hold semi-skilled or relatively unskilled jobs that can be learned with not more than a few months of training. *These are the types of work that the majority of young people will enter.* Our war plants are hiring them by the hundreds of thousands and are still shorthanded. Thus, manual work offers the brightest opportunity for young people looking for their first industrial jobs.

The War Crisis in Farming

Because too many farm hands leave the fields to seek high-paying jobs in war plants, there is also a serious shortage of manual workers on farms. Many farmers have failed to appreciate in the past that they are highly skilled, vital workers who simply cannot be replaced quickly in times of crisis.

To lick this shortage, young people with farm experience should think seriously about remaining on the farm, at least for the duration of the war. Getting up before dawn and performing the routine



J. I. Case Company Photo

Because we must supply both ourselves and our allies with food, farmers today need young people to help plant and harvest record wartime food quotas

chores of a farm hand may not seem very glamorous, but it is absolutely essential to our nation's victory. Thousands of rural youth will be able to serve their country best by working at what they know best—farming. And wherever a shortage of farm help develops, it goes without saying how important it is that girls do everything they can to help relieve that shortage. Seventy per cent more women were working on farms in the summer of 1942 than during the summer two years before. When the supply of farm women was used up in the summer of 1943, girls from the city began to lend a hand.

The labor shortage on the farm front is one that only overtime effort will overcome. The United States is not feeding itself alone. Throughout the war and during the disorganized reconstruction period afterwards, we Americans are charged with the task of feeding the millions of hungry allies who are fighting alongside of us. We are feeding much of England, a good part of Russia and China; our mercy food is being sent to the downtrodden of the world wherever they may be. We are rich in food and rich in fertile farm land, but the task we must bear is far greater than we normally handle. "Food will win the war and write the peace," said Secretary of Agriculture Wickard. But even a nation as blessed as our own must make the sacrifices of hard, unselfish, backbreaking work if Secretary Wickard's prophecy is to come true. The farm manpower shortage is now so acute that thousands of key people in rural areas are being deferred from the draft so that they can get in the food we need to win. Not only are they deferred, they are *frozen* on their jobs. Agriculture is as much a war service field as aircraft construction, and we cannot risk a breakdown on the food front.

Each year as long as the war lasts, our country will need the services of about 9,000,000 farm workers—with a demand for 12,000,000 during harvest seasons. It does not look now as if this farm labor problem can be overcome completely. Between 1940 and 1942, the number of farm workers declined 800,000 to a dangerous low of 7,800,000. This puts an extra burden upon school students and part-time workers who will have to help get the crops in.

Where Are the Industrial Jobs?

The war has boomed such industries as steel, machine tools, and aluminum beyond all belief. Shipbuilding, ordnance, and aviation are riding sky-high. Already, there are more than a million workers employed in aviation alone, a total gain of more than 1,000 per cent in the past few years. For example, the automobile industry, which has converted from making cars to making planes and other war machines, will soon employ almost twice as many workers as it did at the peacetime peak! In fact, most of the gain in employment in America since 1940 has been brought about by the boom in industrial work.

Today, employers are scraping bottom in their hiring for war

production. Old workers, who retired several years ago, have been brought back into factories and retrained. Young workers, with no previous work experience, have been recruited and taught simple machine operations. And women, who in pre-war days worked largely in two industrial fields—textiles and tobacco—have entered a long list of masculine trades such as welding, riveting, instrument making, aviation mechanics, and many others.

With the draft taking our young men as fast as they leave school, the burden of production for war is being placed more and more upon women—school girls, housewives, and civilian workers in non-war fields. Among the types of work which women can perform as well as men in industry are drill-press operation, mechanical instrument making, semi-skilled grinder operating, heat-treating occupations, core making (in foundries), radio assembly, fabric work, inspecting, lens grinding, coil winding and coil assembly, and occupations in optical goods, clocks and watches, and electrical equipment.

Typical of the occupations which women are gradually taking over is inspection work. A large number of the inspectors in war industries are employed by the Federal Government. By the summer of 1943, the government had more than 33,000 inspectors on the job inspecting ordnance and engineering materials, aircraft, shipbuilding, and many other war-important products. Formerly, inspection was man's work, but the draft has brought about a drastic shift in the field. In fact, the number of women employed as inspectors multiplied four times from 1941 to 1942, and it is still going up! Only draft-deferred workers are being considered for inspection jobs. More often than not, that means women.

Booming Fields for Women in Industry

The *aviation industry* is a good example of a field into which women are pouring. In October, 1941, only 2,000 women were employed in aircraft assembly plants. By April, 1942, that number soared to 17,000, and it reached about 118,000 by the end of the year! West Coast airplane plants will soon be hiring women for more than a third of their jobs. In recent months, women have made up almost half of the workers hired in some plants, and the proportion is going up. Only the heaviest aircraft work is beyond their capacities. For ordinary jobs, the female of the species is fully



General Motors Corporation Photo

One of the things women are doing in industry is inspection work. These women are inspecting ball bearings destined for use in aircraft assembly

the equal of the male. A hint at what might come for women in aviation can be had from the experience of Great Britain, where it is estimated that the proportion of women working in aircraft plants might be increased to 70 per cent!

Women are also filling large numbers of jobs in the *ammunition industry*. They are taking over the complete operation of cartridge assembly loading machines, doing visual and gauge inspection work, and many other "close" jobs about ordnance plants. In the manufacture of artillery ammunition, the government estimates that women can perform two-thirds of the necessary jobs. Women ordnance workers, who have their own nickname, the WOWS, num-

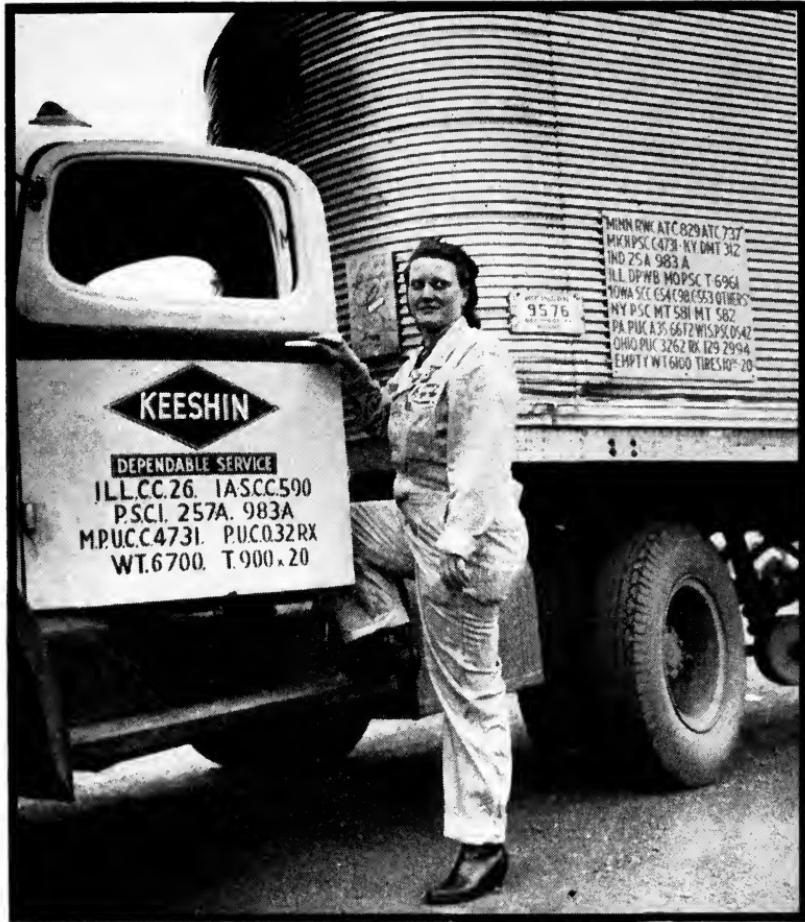
bered 200,000 one year after Pearl Harbor. Ammunition employs more women than any other war industry field. In some plants they may soon be holding down 70 to 90 per cent of the jobs!

Still another field which has been forced to draw upon women to fill manpower shortages is *communications*. Women telephone workers, who even in peacetime made up 60 per cent of those employed in the industry, are sorely needed today. In 1941, 57,000 new employees were added to the 300,000 already at work in the industry. During 1942, that figure was topped substantially. There is almost no hiring of male telephone workers now, and qualified women are landing many technical jobs which were formerly reserved solely for men. Even telegraph messengers are wearing skirts. Western Union alone has put thousands of girls to work delivering telegrams!

How women can fit into the *machinery industry* has been graphically illustrated by England. There, 45 per cent of the machine tool workers are women. In our own country, women are getting machinery jobs slowly but surely. Of the forty-seven occupations in the field in which shortages exist or threaten, seventeen are wholly suitable and twenty-two partially suitable to women.

Women in the *instrument industry* also belong on the nation's war work honor roll. Instrument work is something made to order for women, who are better than men at fine assembly jobs. In some instrument plants, more than half the workers already are women and the jobs they perform range from testing and inspecting to special machining of parts.

The sight of women driving transcontinental trucks or working on giant railroad locomotives would have been strange indeed a few short months ago, but today it is nothing to blink at. For thousands of women are invading the *transportation* field. The railroads, which in 1940 employed 47,000 women (largely clerical workers), now hire women as freight loaders, ticket agents, engine wipers, and as general laborers in roundhouses. And trucking companies now employ women drivers as well as office workers. The day is not far distant when women conductors and motormen on streetcars will be a common sight. In air transportation, too, the employment of women is shooting up rapidly. During 1942, the percentage of women employed by airlines jumped from 20 to 30 per cent.



Chicago Sun Photo

Driving a huge cross-country transport truck was formerly believed to be a man's job, but today women are bringing heavy loads through safely

More than a fourth of the workers in the nation's *rubber industry* already are women, and indications are that as the war progresses they will take over thousands of additional jobs. In Akron, Ohio, the center of the rubber industry, 70 per cent of all new rubber workers being hired are women. They are employed on all kinds

of war-important jobs, from making life rafts and balloons to self-sealing gas tanks and gas masks.

Even in the relatively non-essential civilian goods fields, women will be required to shoulder a large part of the work burden. Though our main concern in wartime is for the men who are fighting, civilian work must go on. People on the home front need food, clothing, and other essentials which must be supplied. Civilian life can be greatly curtailed, but certain necessities must continue to be provided.

The *textiles* field has always been a big field for women. Women make up 60 per cent of all the workers in the men's suits and coats industry, and 90 per cent in the women's garment field. They hold down half the jobs in shoe manufacture, and almost all the jobs in the necktie and cap industries. Now they must be prepared to take over jobs in these civilian fields as fast as they open. Whenever a man or woman leaves these jobs to go into something else, there must be a woman ready to fill in.

Other industries, too, are calling on more and more women to plug the gaps left by men who have gone into the service. Many employers were reluctant to hire women at first because they felt that they could get most of their men deferred from the Army. This is not the case any longer, for it is now increasingly difficult to get deferred ratings for workers, and women have finally come into their own on the assembly lines of war production.

One other important point must be made: Though most of the publicity has been going to war jobs for women, the great majority of jobs girls will land when they leave school will be in civilian occupations not directly essential to the war effort. They will replace men on these jobs, thus allowing them to take war jobs themselves. For a detailed list of typical occupations outside the war effort that women will take, see page 211.

The cold fact of the matter is this: The United States is heading for the worst kind of industrial labor shortage unless more and more women are recruited for jobs in war plants. High-school girls can do both their country and themselves a real service by concentrating on such jobs when they leave school. And, as we will see in Part Four, no girl need worry about getting the training she needs for a war industry job. Ample training is available *free* both in vocational schools and on the job.

A Look at White-Collar Work

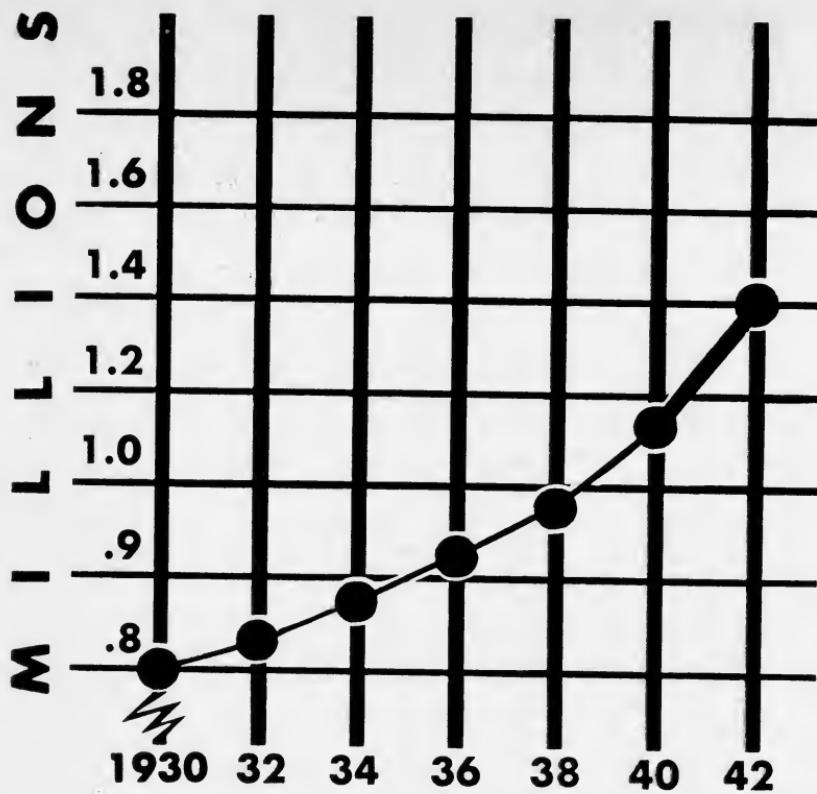
American youth have always had a weakness for careers in white-collar work, preferring desk to machine jobs, and professional careers to trades. Three out of every four young people want to get into white-collar work, yet in ordinary times only about 40 per cent of the jobs fall into that class. Now the war has upset completely the balance of occupations and shifted it more than ever toward the "work shirt" fields. And besides the greater number of openings, pay scales for manual workers have also risen much faster.

The brightest white-collar field at the moment is clerical work, the fastest-growing occupation in recent years. All during the depression-ridden 1930's, when every fourth worker was out of a job, clerical workers bucked the trend and increased in number, although many clerical workers were always jobless. The number of stenography workers hit the million mark by 1940, and it is estimated that they have increased by another quarter million since. Here again, however, the welcome mat is out to girls almost exclusively, because employers will not risk hiring boys with the draft lurking just around the corner.

The largest single employer of clerical workers is Uncle Sam. Today, his pay roll (which has surged well beyond three million workers and is still rising, though at a much slower rate than in 1942) numbers over 130,000 stenos and typists alone. And thousands more are needed all over our country. Other clerical workers wanted by the tall man with the high hat include tabulating machine operators, alphabetic card-punch operators, sorting machine operators, mimeograph operators, and many others. For most of these jobs, such as stenography and typing, no formal education is necessary and the skills you pick up in high-school commercial courses are sufficient to qualify you for work. Pay is good, ranging from about \$1,260 to \$2,000 a year.

Uncle Sam's clerical needs are duplicated by private employers all over the country. It is not unusual today for a qualified girl to land a clerical job at first asking—and at a salary that compares well with the scale paid by the Federal Government. Some girls are even being paid while receiving training on the job!

Retail trade is another field which is on the lookout for women. Though war curtailments have hit the nation's retailers hard—in many cases leaving them with little or nothing to sell (such as stores dealing in radios, phonographs, and refrigerators), so many men have



Graph shows the increase in number of stenographic and typing jobs since 1930

been drafted that women who long to sell now have a golden opportunity to find work. For example, the Christmas rush in 1942 found thousands of school boys and girls, as well as housewives, working behind store counters. By and large, however, retail business is one the slumping employment fields and will be for the duration of the war.

A Look at Scientific Jobs

Perhaps the most serious labor bottleneck in the whole war program is in scientific occupations. Scientists are not trained overnight.

Those who work at professional levels, like chemists, physicists, physicians, engineers, must usually have at least four years of college under their belts. Yet we are now faced with the problem of recruiting such highly trained scientific personnel in the quickest possible time.

Though many boys in college will be sent back to school to complete their science training after they are inducted, women hold the solution to the scientific manpower shortage problem. In the past, most scientific fields have been restricted mainly for men. As a result, the women of America must now hasten their training efforts to qualify as scientific workers wherever and whenever they are needed.

More than 40,000 male physicians and surgeons are already in the armed services. In the near future, that number may be greatly increased. There will inevitably be a severe shortage of doctors on the home front, and that in turn means that the girl who wants to become a doctor will never find a better opportunity to get started toward a medical career than today.

Tomorrow's "lady doctors" will have an easier time getting accepted by medical schools than did the 7,600 female physicians now practicing in the United States. Hospitals are hard pressed for all types of medical workers, and they have begun to accept women for jobs formerly held by men who have left to join the armed services. They now need some 20,000 trained persons immediately, and soon will be in the market for 20,000 more. Most of the workers needed are nurses, but dieticians, technicians, medical social workers, and medical-record librarians are also in demand.

The same situation exists for women in dentistry, where our present force of 1,500 female dentists is proving grossly insufficient, and dental hygienists are at a premium.

The girl who likes to poke into test tubes and pore over microbe slides should be able to find her career in one of the many laboratory jobs connected with medicine. Pharmacy is another career "natural" for women today. As in medicine and dentistry, women have a hard row to hoe in pharmacy, but if they can make the grade, there are jobs galore in manufacturing concerns, hospitals, drug stores, and with the government.

Another growing force of women also is invading the science field. They are the chemists, physicists, technicians, mathematicians, and other professional scientists of the so-called weaker sex.



St. Luke's Hospital Photo

Most hospitals are clamoring for girls to go into nurses' training, so that they can take the places of the nurses who have entered the Army and Navy

Valiant as the war service of these women scientists has been, the production record Uncle Sam is struggling to achieve may still be missed unless many more women are trained for scientific work. The shortage of trained people in many sciences is already severe, and it threatens to get worse. Here is a brief run-down of the major scientific fields for which women recruits are solely needed immediately:

Chemistry. In 1942 alone, our war industries had jobs open for between two and three thousand more chemists and chemical engineers than our colleges and universities graduated. The demand is even greater now. Who is going to fill the gap? Women, of course. But how can the shortage be overcome, when it takes at least four years to train a professional chemist and only about 350 women complete that training annually? A partial answer can be found in the

special short courses available to science-minded students under the ESMWT (Engineering, Science, Management, and War Training) program sponsored by the United States Office of Education. These short courses train men and women for specific jobs in industry, such as engineering aide, laboratory technician, and draftsman.*

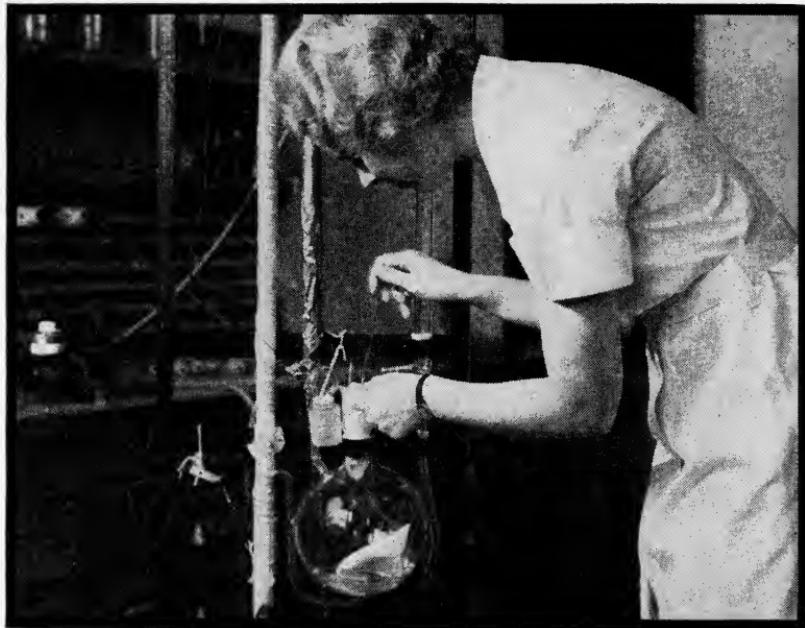
Physics and electronics. This is a field which is practically brand new for women. The United States Navy, however, now is ready to take on women who can qualify as radiolocators, assistants in research laboratories, and installers of radio communications equipment. Professional jobs with the Navy (for women with college degrees) start at \$2,000 a year. Women who lack college degrees may start at \$1,620 a year if they hold amateur radio licenses. Many high schools now offer radio training courses which will prepare girls for just such jobs.

The Signal Corps of the Army is another military branch which needs civilian women to do radio work. As a matter of fact, the armed forces will have jobs for 25,000 women in the field of radio alone within the next few years.

Engineering. Though 40,000 new students begin engineering training every year, only about 18,000 of them complete that training. There are a quarter-million engineers in the United States today, and more than 99 per cent of them are men. In the past, few women even dreamed of engineering as a career, because it was considered strictly man's work. The war has knocked the props out from under that idea, however.

Thousands of engineers are now serving Uncle Sam in the Corps of Engineers and with the Navy. In fact, about half our engineering graduates are being commissioned by the Army and Navy, with the other half being left to do critical work on the home front. Those remaining on the home front are not nearly enough to wrestle with the engineering problems created by the war. Thus, nearly every kind of engineering job is now open to women. The Navy, for instance, needs help in its naval architecture departments. Other kinds of engineering in which a great number of women are needed are chemical, civil, electrical, radio, heating and ventilating, refrigerating and air-conditioning, sanitary, and industrial. The handful

*For a more detailed explanation of this and other war-training programs, see the discussion beginning on page 135.



U. S. D. A. Photograph by Purdy

In the scientific fields, jobs for women are opening up rapidly in research, chemistry, physics and electronics, engineering, aeronautics, and medicine

of pre-war women engineers have already demonstrated that women can handle engineering desk jobs as well as men. Women who lack college training and still want to get into the field can salvage their hopes by taking the handy short courses offered by the ESMWT program.

Aeronautics. Among the scientific jobs open in this field are many which the average American never dreamed existed—such as flight statistician, reliefer and plotter for aircraft warning devices, photographic interpreters—in addition to the usual need for research assistants, laboratory technicians, technical librarians, inspectors, and engineering aides. Here again, the war has stepped up the demand for workers in the field, and since so many have left to serve in uniform, there are now many openings in scientific aeronautics for women. ESMWT training is available here, too.

Other Professional Wartime Opportunities for Women

Though science and industry are the outstanding wartime job fields today, there are several others which are war important and need workers by the thousands. Two of these are on a professional level and offer excellent opportunities to young people who yearn for professional jobs.

Teaching. America needs teachers! A statement like this could not have been made during the past few years. Even though about a hundred thousand new teaching jobs opened each year even in "normal" times, the supply of teachers was usually much larger than the demand. But times have changed!

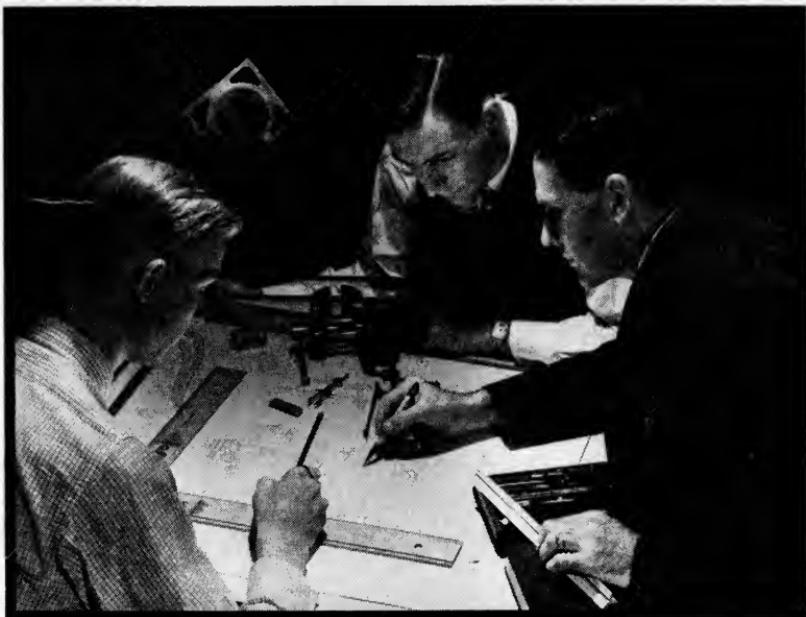
A nationwide survey of teaching opportunities was recently completed, and it reveals that a shortage of teachers exists in forty-three of the forty-eight states in the union. The present force of about a million teachers is too small to serve our school population of almost thirty million students.

What lies behind this sudden shortage of teachers, which has catapulted the profession into the front ranks of America's job opportunities? Practically every state agrees that the national war program, which is luring thousands of instructors into better-paying government and war industry work, and into the Army, is largely responsible.

Applicants for teaching jobs aren't lined up on board of education doorsteps today as they were a few years back. And with military service and the war industries drawing young male teachers into other work and many women teachers quitting to get married, the situation is fast getting serious.

A word of caution which should be studied by all would-be teachers is this: though there is a definite shortage of teachers in both high and elementary schools today, most of the jobs are in elementary schools. Of the states which reported shortages, twenty-one stressed the need for teachers of elementary grades. One exception to the general teacher shortage is at the college level in the humanities and social science departments. The draft and high-paying jobs are reducing radically the number of students, and many of the smaller college institutions may even be forced to close before long.

Job openings on the high-school level call mainly for experts who can teach industrial arts (machine shop, electric shop, foundry and



High-school teachers trained to instruct in drafting, machine shop practice, foundry work, and other industrial arts subjects are much in demand today

forge work, and related subjects), commercial subjects, home economics, and other such specialized courses. There seems to be no serious shortage of teachers of social science, English, history, and languages. Here is a brief list of the kinds of high-school teachers who are most in demand:

<i>Subject</i>	<i>Number of States Reporting a Shortage</i>
Industrial arts	21
Commercial subjects	21
Home economics	13
Physical education and coaching.....	11
Vocational agriculture	10
Science	7
Mathematics	6
Music, band, and orchestra.....	5

Social Work. Here is a professional field in which women have made up the large majority of workers for many years. Of the hundred thousand social workers in the country today, three out of four are women. Thus, the critical shortage that now exists in social service work opens the door to more and more girls who can qualify for jobs.

In ordinary times, ten thousand new jobs in social work must be filled every year. The war has intensified the demand for trained people to such an extent that there are now at least ten thousand jobs open, and the immediate future will see many more go begging.

The shortage of social workers is most acute in defense areas where people have crowded together around large war plants. In addition, there are still more than a million people out of work in depressed areas who need to be cared for, as well as many other unfortunate old people and children who need the help of trained social workers. Though professional women in the field need some five or six years of college training, there are jobs with public agencies and private charitable organizations which can be filled by workers with less education.

Jobs with Uncle Sam

No discussion of wartime work opportunities could be complete without a mention of the nation's largest employer, the Federal Government. Uncle Sam has increased his employees to an all-time high since Pearl Harbor and, though many of his needs have already been met, he still offers opportunities to qualified applicants.

Almost every type of worker is on the government's employment list. Among the more than three million men and women already employed can be found people with skills, trades, and talents of nearly every description.

Ranking at the top of the list of government civilian war workers are the women working for the War and Navy Departments. Almost a third of a million women are already employed by the War Department alone. They are handling thousands of routine white-collar jobs and also are filling in on the more spectacular jobs such as testing antiaircraft guns, driving tanks, and running fifteen-ton cranes. The Army has more jobs for women draftsmen than it can fill, and the same holds true for radio technicians.



Chicago Public School Photo

Civil service jobs for white-collar workers are plentiful, for wartime expansion of government departments has caused a big increase in paper work

Some sixty thousand women now work for the Navy. They hold jobs in various Navy yards and in ordnance plants. They work in physics and chemistry laboratories, and as mathematicians and inspectors. For many of these Army and Navy jobs, the War Department has set up special pre-employment training programs for new and would-be workers. Students in some of these programs earn while they learn, because they hold civil service status while undergoing training.

The government also is hunting high and low for college-trained men and women who can qualify for professional work. Particularly needed are experienced engineers, physicists, and chemists.

Engineering graduates who have not had practical experience are badly needed as junior engineers at \$2,000 annually. Even college students who haven't yet obtained their engineering degrees may secure what is known as "provisional appointments." While still going to college, they may apply for a special examination. If selected, they can start working for the government as soon as they complete their studies. There also are thousands of jobs open for engineering aides and draftsmen.

Youth who are interested in radio will find equally wide opportunities. The War Department's Signal Service needs junior communications operators who know how to handle high-speed radio equipment. There's also an acute shortage of radio operators and radio mechanic-technicians.

Right now the government can use instrument makers, lens grinders, machinists, shipfitters, toolmakers, blacksmiths, welders, and almost all kinds of aircraft and professional workers. No matter what your skill is, the odds are Uncle Sam has a job that you can do if you only know how to land it. In private industry, too, many jobs go begging every day because workers do not know that they are open. The wise job seeker should become thoroughly acquainted with job agencies before he sets out on his job hunt.

Getting a War Job

Stop number one for nearly every job seeker should be the nearest office of the United States Employment Service. This agency operates 1,500 full-time and 3,000 part-time offices throughout the country—in every state in the Union—and it is organized to serve employers and job hunters alike.

The USES knows the local job situation, because employers in need of workers report their needs to local offices. The USES keeps a huge file containing the names of millions of workers. It can answer your questions about training programs, about job qualifications, and the hundred and one other important things you absolutely must know to guarantee success in your job hunt. Every worker in search of war employment should register with the USES and contact it often.

For federal jobs, the United States Civil Service Commission does most of the hiring. Though in many cases the USES is well acquainted with openings in the civil service, those who want to



The United States Employment Service is a free service which places workers where they are most needed and can best use their experience and training

qualify for federal jobs would do well to contact the local civil service office. Information about and applications for civil service jobs may be obtained at any one of five thousand first and second class post offices in the United States where job announcements are usually posted on bulletin boards. By sending your name to the United States Civil Service Commission in Washington, D.C., and stating the type of jobs you are interested in, you can be put on a special mailing list and be notified whenever examinations are open in your field.

In addition to these two main job-getting agencies, there are several other sources which are important to know about. One of these is the private employment agency, which charges a fee that the worker pays when the agency helps him find work. Those students who register with such agencies should first make certain that the fee to be charged is fair and that the agency can get them the jobs

they want. When honestly conducted, private agencies can be of real help, especially to the inexperienced job seeker.

In some cases, too, schools conduct employment agencies especially for their own graduates. If your own school has such an agency, by all means register with it. Even if it hasn't, your vocational counselor or some of your teachers may be able to help you in your search for employment.

One major point you will always have to keep in mind, however, is this: though jobs are plentiful, the best ones go to the applicant with training. The wise student will get as much training as he can before he makes a dash for the employment office.



Metro-Goldwyn Mayer Pictures

PART FOUR

***FITTING
YOURSELF
FOR VICTORY***

-AND AFTERWARDS

11. WHY YOU NEED TO TRAIN NOW

Trained Men and Women Win Wars

This is a fight between a slave world and a free world. Just as the United States in 1862 could not remain half slave and half free, so in 1942 the world must make its decision for a complete victory one way or the other.

The average American high-school boy or girl, reading these lines from the famous "free world" speech delivered by Vice President Wallace in New York on May 8, 1942, is inspired to do something about winning this war. There is one all-important rule which all young people should bear in mind, however, before they set out to make their contributions to victory: *trained men and women win wars.*

This war is surely, as Henry A. Wallace described it, the people's war. The right is all on our side, and because we are firm in our right, we know that we will win. But there is more to winning a war than believing in a just cause. Particularly now, when war is fought with complicated machines and tricky mathematical formulas, victory goes to the skilled, the scientific, the well trained. When Hitler's legions plunged through Belgium and France and Holland and Norway and Poland and other helpless countries, the Nazis were fighting for a vicious, brutal, undemocratic purpose. But they won—and with such crushing ease as to impress for all time upon the leaders of our democracy this fact: America can survive in this war of worlds only if it can outthink and outfight the Axis. That is why the armed forces which we are now sending out to meet the hordes of Hitler and Hirohito are trained to razor edge. Because they are in the right, they will fight harder. Because they are better trained, they will win.

Trained Workers Produce

What is true for our fighting men is equally true for the men and women who fight the battle of production on the working front. America needs engineers, but engineers cannot be made overnight. Our country needs skilled tool and die makers, machinists, stenographers, doctors, teachers, social workers, and a thousand and one other kinds of workers. But none of these can perform their duties ade-



Official U. S. Navy Photograph

This is a war requiring specialists' skills, and young people today should plan their courses to meet the future demands for specialists' training

quately without a background of school work, study, and practical experience.

Your obligation as a student today is to begin preparing for war service *now*—while you are still in school. Whether you expect to enter a fighting service or take a war job in industry when you graduate, you will be cheating your country and yourself unless you get all the training you can while you can. This rule holds as much for

the girls who will soon be working in war factories and farms as for the boys who will carry rifles and bear the brunt of the fight. The more than two million young men and women who leave our schools every year have a solemn responsibility to prepare for service with Uncle Sam *before* they are called upon to serve.

It's a Specialist's War

There is already a shortage of manpower in the United States today, particularly the right kind of manpower. We are 134,000,000 strong. There is no nation like us on earth. But we need look no farther than the Army and our war industries to realize that, unless we can train our huge force of men and women rapidly, we will face a long and bitter struggle.

The war is being fought by specialists. It is a physicist's war, a mathematician's war, an engineer's war. It is a war of metal and test tubes and brains. Brawn alone isn't enough. Courage alone isn't enough. Patriotism alone isn't enough. What we need in addition to patriotism is brawn and courage and patriotism mixed with skill and training.

As Lieutenant General Brehon B. Somervell, Commanding General of the Army's Service Forces, recently put it, "Our Army today is an army of specialists. We aren't getting those specialists through the induction centers. But modern mechanized warfare dictates that we must have them . . . these shortages of trained manpower are serious. . . . The situation is not getting better. *It is fast getting worse.*"

Here in a paragraph is the reason why you must train yourself to do a specialist's work. In the winter of 1942, when our Army totalled 5,000,000 men, there was already a shortage of 800,000 specialists in the ranks, and military leaders were gloomily forecasting a shortage of 2,000,000 if youth did not get the proper training immediately. General Somervell stated the fact this way: "For every 1,000 soldiers, 15 men in radio are needed. At present only one such man is available. For every 300,000 soldiers, 4,501 medical technologists are needed; 166 are available. For the same 300,000 soldiers, 1,562 master mechanics are needed; only 14 are available."

These are the cold facts. What are you—as a student who faces call for certain war service of one kind or another—going to do about it?

Your School Can Help Train You

The fact that you are still attending school can help to answer the above question for you. You need training. You can get that training, or a good share of it, right where you are—in school. To find out how school work can help you, look at the qualifications you'll need to have in the armed forces and war industries, and see how these qualifications can be gained in the classroom. There are four of these qualifications to which you should pay particular attention:

1. *Physical fitness.* Far too many young people are unable to serve their country because they are not in tip-top physical shape. If you haven't had a physical exam recently, get one to find out how you rate, and start building up where you are weak. If you don't know how to swim, learn. In one big batch of Navy recruits, it was found recently that one out of every five didn't even know how to keep his head above water! If you have any physical defect that can't be corrected, start planning for some type of war work where it won't handicap you. For example, if your eyesight is not 20/20, you can't hope to become an airplane pilot, but you can go into airplane mechanics, or most other kinds of military work. (For a more detailed discussion of this all-important matter of health, see page 164.)

2. *General educational training.* Many thousands of Army and Navy recruits have been turned down for specialist's and officer's training because they weren't up on their high-school subjects. Inability to handle arithmetic is the most common single failing. A sound training in all general high-school subjects is important, the most vital ones being mathematics, physics, chemistry, and geography. (Further information on school subjects vital to victory can be found on page 135.)

3. *Vocational training.* The specialist's jobs, both in the armed forces and in industry, will go first to the persons who already have specific vocational training when they start to work. In the list on page 130 you will find a list of the twenty high-school subjects in which trained young people are needed most by America's war machine today. You will find it interesting and most helpful if you will examine this list and see how many of these subjects you can get training in. Some of them are probably taught right in your own local school. If the ones



Photo from Frank Wiggins Trade School

These young men are learning to be riveters in a trade school. This specialized training will fit them for immediate work in an airplane plant

you want aren't available there, see if you can't get them somewhere in night school or by correspondence.

Agriculture	Nursing
Auto repair	Nutrition
Blueprint reading	Office machine operation
Bookkeeping	Personal hygiene
Cooking	Photography
Foundry	Plane repair
International Morse code	Pre-flight aeronautics
Machine shop	Radio and telephone repair
Mechanical drawing	Shorthand and typing
Model plane building	Woodworking

In addition to thees courses, there are eight special pre-induction courses which the War Department has developed to train young men for Army service in advance. See page 135.

4. *Discipline*. Besides the specific types of training that have already been mentioned, there are several other "intangible" qualities which the government is seeking hard to find among young people right now. The first of these qualities is *leadership*. Not counting commissioned officers, between one-fourth and one-third of all the young men going into the Army will eventually wear the stripes of the "non-com." The proportions are roughly the same in the Marine Corps, and even higher in the Navy and Coast Guard. In the same sense, war industries are seeking foremen and supervisors, the non-coms of the assembly lines. The non-com leader must have technical training, he must know how to instruct the people under him, and he must know how to inspire in them the willingness to follow him.

Two other qualities that are particularly needed in young people today are *obedience* and *adaptability*. A person must know how to follow others before he can lead, even if he doesn't always know why he is being required to follow. And he must be adaptable enough to shift quickly from one job to another without getting all tangled up in the process. These are the requirements of a good soldier and a good worker.

12. MAPPING YOUR WARTIME PROGRAM

Your School Has Converted for War

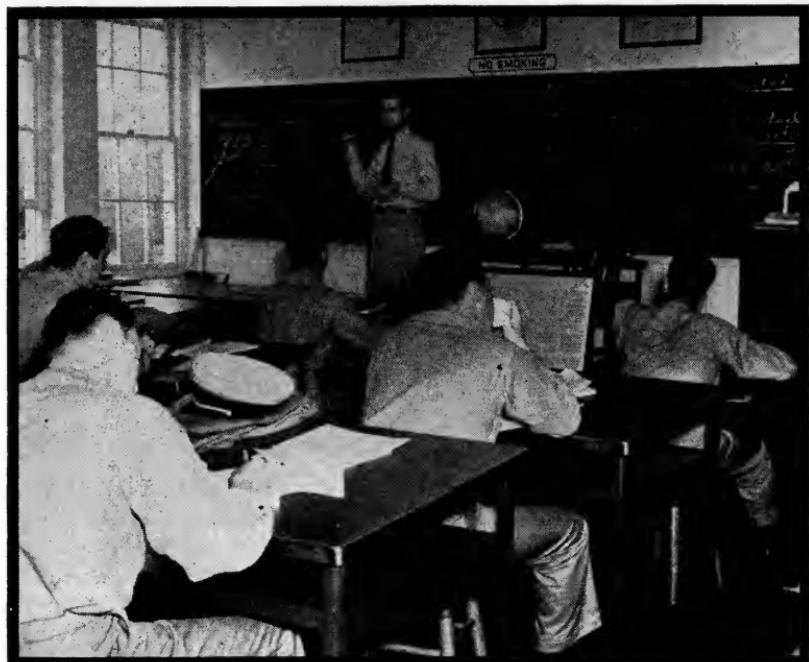
THE WAR has turned your school upside down. To get the maximum benefit from your work in class, you will have to adjust to the rapid and complete change that is occurring.

The first thing every student must realize in laying his plans for the future is that the *reason* why he is going to school today is different from that in peacetime. The usual purpose of education is to prepare people to cope intelligently with the problems of life. *Today its main purpose is to train men and women to be more efficient and intelligent warriors and war workers!*

Your big job as an American now is to help Uncle Sam win the war. After you reach the age of eighteen, you will have no reason to be in school unless you are preparing yourself directly for some war job. As War Manpower Director Paul V. McNutt recently put it, "There is no excuse for any young man or woman to be in college preparing for any profession not directly useful to the war effort."

To prevent such waste of the nation's training facilities, the armed forces are taking over several hundred colleges to use for the special training of soldiers. College men who are members of the various enlisted reserves are being called to active duty. The Army plans to remove from the colleges all male students except those whose attendance aids the war. It also plans to place 150,000 soldiers and WAACs in the colleges to study war-important subjects. Those chosen will be boys whose superior abilities (as revealed by special tests) entitle them to receive college training. No longer will money make a difference, because if the Army thinks a soldier "has the stuff," it will send him to college free, and better still—pay him for it! (The Navy is sending 100,000 men and women to college under its own program.)

These blunt facts are bound to have immediate and far-reaching effects upon your educational and vocational plans, and upon those of every other high-school student. If you are a boy who has been planning to go on to college, you probably must give up the idea of completing your formal education until after war days are past. Unless you intend to take up specialized technical work vital to the war and can qualify for Army collegiate training, your high-school gradu-



Official U. S. Navy Photograph

The government pays these naval aviation cadets to go to school, for they have been chosen because of their exceptional abilities as shown by tests

ation marks the end of your educational line for the duration. If you pass the eighteen-year mark before you finish, you may not even be allowed to graduate. (Girls should also consider tabling their dream of a college degree for the duration unless they feel qualified to study and master key subjects which will help to fit them better for war jobs.) In turn, this means that you will have to plan to return to school and complete your education after the war is over.

It does not necessarily follow, of course, that your educational progress will be at a standstill until Hitler and Hirohito are brought to their knees. For men, all branches of the armed forces offer a wide variety of opportunities to study while they are in the services. Some of their war-study work will be convertible to school credit toward a high-school or college diploma later on. And persons who land



Official U. S. Navy Photograph

Some of these naval aviation cadets may use their ability to send and receive radio messages after the war when they go back into civilian life

business and industrial jobs now can still improve their skills and prepare for useful peacetime work by taking special short courses now available in evening and part-time schools.

You should resolve, then, to carry your present educational program forward to the nearest milestone—probably high-school graduation. Plan to go on for further schooling only if it would make you a more efficient war worker than you now are without it.

If you're not in the path of the draft as yet—either because you're under eighteen or physically deferred—you still have a patriotic obligation to fulfill. You must think of your school work from now on as being as much a part of the war effort as though you were actually in uniform. When you leave school, you must be prepared to take your place in a world that has been completely changed by war. You'll have a deadly serious job to do—either at the front or behind the lines—and you'll be on your own. You won't be able to postpone important decisions or pass them off on your parents. To hold up your end of the war effort, you'll have to play the part—and *be the*

part—of an adult. That is the responsibility Uncle Sam has placed on your shoulders, and you'll let him down if you fail.

Special Wartime Training in High School

In converting to a war basis, your school has opened special classes and activities which you can pursue in your search for wartime training. It is your patriotic obligation to fit yourself into this converted program as smoothly and efficiently as you can. The special training now available is designed to convert *you*—in mind, body, and spirit—for the war job you must shoulder a few months or years hence. Basically, four new types of training are now offered by most of the nation's high schools:

1. Pre-induction training (for boys preparing for war service in one of the fighting branches)
2. Pre-flight training (for boys who will be recruited for flying and ground duty in the armed forces)
3. Vocational training (for able-bodied girls and physically-deferred boys who will serve on the production lines of our vital war industries)
4. Wartime citizenship training (for all students who want to know more about our war and peace aims, and who need the spiritual and moral boost of understanding the whys and hows of a democracy at war)

Pre-Induction Training Courses

The War Department has already outlined eight special pre-induction training courses which many high schools are now offering to students. These courses are especially designed to train boys in the fundamental skills needed in a wide variety of service and vital civilian occupations as well as in the Army itself. The seven courses and the job training they supply are:

1. *Fundamentals of electricity.* This course prepares youth for such Army jobs as
Army Air Forces. Communications chief, power turret maintenance man, airplane electrical specialist, army airplane and engine mechanic

Army Ground Forces. Lineman, automobile, telephone, and telegraph electrician, control system repairman, telephone operator, field portable power generator operator
Army Service Forces. Signal noncommissioned officer, director repairman, telephone equipment installer, switchboard installer, telephone and telegraph signal communications instructor.

2. *Fundamentals of radio.* This course prepares youth for such Army jobs as

Army Air Forces. Communications chief, air forces radio mechanic, air forces radio operator, radio operator, fixed station radio mechanic

Army Ground Forces. Radio operator, communications chief, signal communication instructor, radio technician

Army Service Forces. Radio repairman, radio operator, signal noncommissioned officer, ground radio repair instructor, field radio communication instructor.

3. *Fundamentals of shopwork.* This course prepares youth for such Army jobs as

Army Air Forces. Airplane sheet metal worker, aircraft instrument specialist, army airplane and engine mechanic, aircraft weapons mechanic

Army Ground Forces. Construction carpenter, sheet metal worker, ship carpenter, telephone and telegraph lineman, artillery mechanic (minor maintenance)

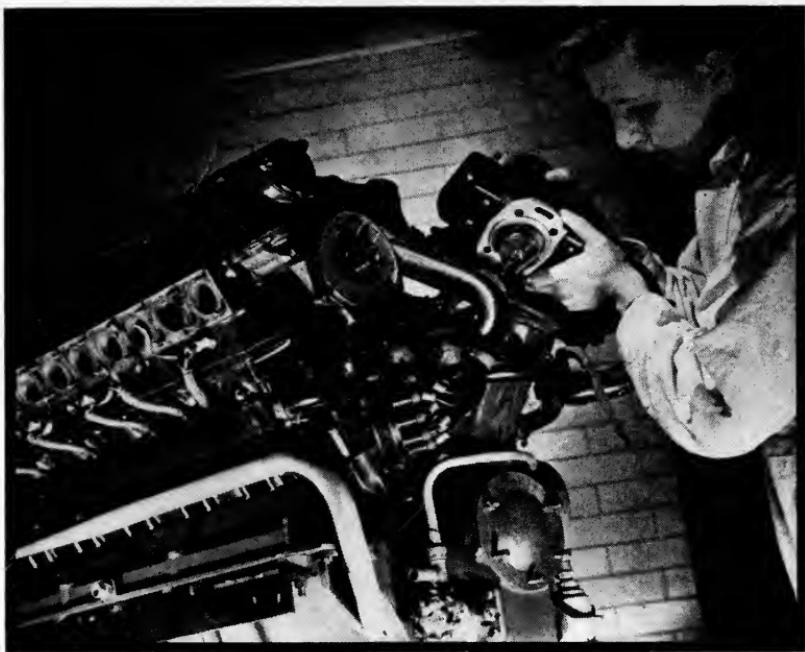
Army Service Forces. Bridge builder, sheet metal worker, telephone and telegraph lineman, toolroom keeper, artillery mechanic (minor maintenance)

4. *Fundamentals of machines.* This course prepares youth for such Army jobs as

Army Air Forces. Airplane inspector, airplane instrument specialist, airplane propeller specialist, army airplane and engine mechanic, airplane armorer

Army Ground Forces. Armorer, artillery mechanic (minor maintenance), artillery mechanic, director repairman, weapons mechanic

Army Service Forces. Instrument repairman (nonelec-



U. S. Office of Education Photo

The pre-induction high-school training course in fundamentals of mechanics will prepare students for any one of seventeen Army or civilian jobs

trical), machinist, utility repairman, shop maintenance mechanic, master mechanic.

5. *Fundamentals of automotive mechanics.* This course prepares youth for such Army jobs as

Army Air Forces. Airplane inspector, Army airplane and engine mechanic, automotive equipment mechanic, automotive equipment operator, Army airplane engine mechanic

Army Ground Forces. Diesel mechanic, automobile mechanic, truck master, motor transportation noncommissioned officer, tank engine mechanic

Army Service Forces. Motorcycle mechanic; tractor driver; truck driver, heavy and light; foreman, auto repair shop; motor inspector

6. *Radio maintenance and repair.* This course prepares youth for a wide variety of jobs in the Army Ground and Air Forces, such as radio maintenance man, radio repair man, instrument repairman, radio operator (air forces), radio mechanic, radio operator (high speed), radio operator (fixed station), and radio operator (low speed).
7. *Code practice and touch typing.* This course prepares youth for many jobs in the Army Ground Forces and the Services of Supply, such as general clerk, clerk-typist, typist, code clerk, cryptanalyst, and stenographer.
8. *Automobile Mechanics.* This course is an advanced version of Course 5. It prepares youth for the same jobs for which Course 5 serves as an introduction.

Pre-Flight Training in High School

“Fly or die!”

This, said Robert H. Hinckley, Assistant Secretary of Commerce for Air, is the issue that has been put squarely before the United States. And he added, “Fortunately, our choice has already been made; we shall *Fly and Live.*”

Though the Army air arm has already passed well beyond the million mark in men, hundreds of thousands more are still needed. Every young man who is physically able to meet the requirements of the air branches should start now to get ready for flying service. We will win the war—and our enemies will lose it—in the air.

No high-school student who hopes to win his wings lacks the opportunity. He can equip himself while still in school with some of the knowledge it takes to become a trained airman, either through joining the Air Service branch of the High-School Victory Corps (the nationwide pre-flight organization which students interested in aviation can join) or through following another pre-flight program. (A full description of the five other branches of the Victory Corps follows.)

The Air Service branch of the Victory Corps is open to juniors and seniors in high school. It is purely voluntary. By the end of 1942 the Corps had half a million high-school boys taking pre-flight courses which it sponsored. And it planned on having four times that many—two million—by the end of 1943.

Victory Corps members wear a snappy uniform on drill days. take



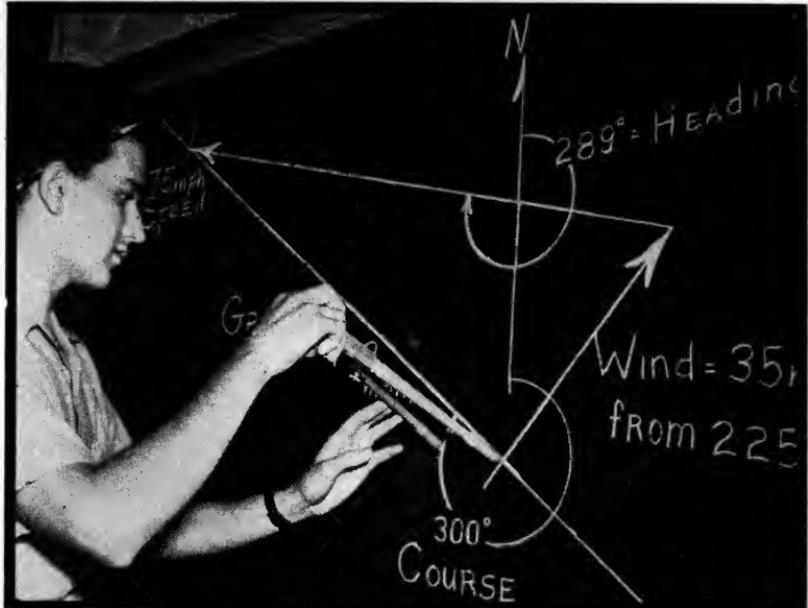
U. S. Office of Education Photo

Pre-flight training for high-school students offered by the Victory Corps gives students an opportunity to learn the principles of aeronautics

courses in aerodynamics, airplane design, navigation, meteorology, and other air-important subjects. Textbooks have been prepared for Victory Corps courses, through the supervision of the Civil Aeronautics Administration and the U. S. Office of Education. If you have not already done so, have a look at some of the new "air-conditioning" books!

Classroom work isn't all that future flyers get in the Corps either. There is training in military drill and calisthenics. They get a taste of aerial gunnery through skeet shooting practice which teaches them how to "lead the target," a vital air-war principle.

Before you can get into the Air Service branch of the Victory Corps, you must pass a physical examination by a local doctor. This is to weed out students who can't possibly make the flying grade because of faulty vision or some other physical shortcoming. Only one



U. S. Office of Education Photo

The Air Service branch of the Victory Corps teaches would-be future pilots much technical information they will need in the Army or Navy Air Corps

would-be military pilot out of ten ever passes the Army Air Corps physical exam, so the armed services are taking no chances with youth who aren't physically perfect. Physical requirements are not so exacting for other Air Corps jobs. If you're in top shape, and if your high-school grades show you aren't a chronic "funkee," you can join up!

Here, in a nutshell, are the rules for joining the Air Service branch of the Victory Corps, as listed by the U. S. Office of Education:

In order to qualify for membership in the Air Service Division of the Victory Corps the students must be planning and have begun preliminary preparation for service in the armed forces as aviation cadets or as aircraft repair and maintenance workers. Evidence of such plans and preparation will be at least three of the following:

- a. One year of high school physics and three years of high-school mathematics;

- b. a course in pre-flight aeronautics;
- c. a course in automotive mechanics, radio, electricity, or a vocational shop course which gives preliminary preparation for the servicing, maintenance or repair of aircraft;
- d. a program of physical fitness;
- e. a program of military drill (if the school has such a program).

If there isn't a branch of the Victory Corps in your school, perhaps it offers a special pre-flight course you can take. A number of high schools in this country already are able to ask new students, "Do you wish to take a commercial, liberal arts, technical, or pre-flight course in high school?" In larger schools, the pre-flight course may last three or four years, and many smaller schools offer one- and two-year courses.

The curriculum for these programs stresses physical fitness, mathematics, and physics. Schools which are able also offer courses in such subjects as meteorology, Morse code, and plane design. Schools with shops, equipment, and trained teachers offer work in aircraft sheet metal work, engine maintenance and repair, aircraft instruments, and many other subjects related to the manufacturing, servicing, maintenance, repair, and flight of airplanes.

Even if your school does not offer a special pre-flight program, there is still another way open for you to prepare to become an air cadet before you get your diploma. Get all the math you can! Take both plane and solid geometry, and trigonometry if your school offers it. Physics is another subject that is a vital necessity for any air cadet. And remember that mental ability isn't all the Air Corps demands from its flyers and crewmen. You'll need to be A-1 physically, and the best way you can guarantee to make yourself tough enough for military aviation is through participation in sports. If you have physical defects which can be corrected, the time to correct them is now.

No matter how intensive or complete it may be, your high-school pre-flight training will not make you a qualified pilot. Admission to the Air Service branch of the High-School Victory Corps does not admit you to the nation's armed services. It can only help in giving you the jump on the fellows who lack that training. And none of these pre-flight activities or studies obligates you to enter military aviation. They only make you a better *candidate* for admission as an

air cadet, in case you choose the flying branch of the service when you reach military age.

Vocational Training in High School

Traditionally, the largest number of vocational and shop courses offered by our high schools have been for boys only. In peacetime, girls had little desire to train themselves in the shops and other technical classes, because the chances of their obtaining skilled factory and manual work after graduation were usually small. Those days have disappeared, and now it is the obligation of girls as well as boys to take advantage of the vocational training offered by our schools.

The arts of the factory assembly line, the foundry, and the machine shop are the all-important arts that will enable us to produce the goods of war in quantities that will smother our enemies. With nearly all boys, except those physically-deferred, slated for fighting duty, girls must learn those wartime arts in order to fill in on the home front. There is a critical shortage of women today who are skilled factory hands. In the working sciences, too—physics, mathematics, chemistry—women are needed by the thousands. Any girl who shirks the opportunity to train in these subjects is not living up to her responsibilities as a citizen. As one serious-minded wag put it, "The girls of America will grease the skids under the Axis by getting good honest grease on their hands."

Wartime Citizenship Training in High School

Now that we are at war, the obligations of citizenship take on a weightier meaning. If we are to bear the burden of a long and arduous struggle, we must renew our faith in America by relearning the ideals which have made it great.

It is not enough today for an American citizen simply to pay his taxes and keep out of jail. It is not enough to think loyal thoughts and take pride in the American way. No, wartime citizenship is more than a privilege. It is also a job—or better yet, *many jobs*.

Fortunately for the youth who wants to shoulder the duties of citizenship, the High-School Victory Corps (whose Air Service branch was discussed on page 140) is a nationwide high-school organ-

ization which offers him the very training and direction he needs. Formed in the fall of 1942, the Corps is open to the 6,500,000 high-school students of America.

The students who join the Victory Corps are training themselves for the time when they will be ready to shoulder their wartime responsibilities as adults. Every high-school student is eligible for membership in the Corps. Freshmen and sophmores are included in the general membership. Juniors and seniors may have a choice of five specialized divisions—production service, community service, land service, air service, and sea service. Each division has its own insignia, and each member of the Corps wears an identifying cap and has special duties assigned to him.

Some of the duties are for both boys and girls. Others may be handled better by boys, just as some may be done better by girls. For instance, both boys and girls can do air raid duty, collect books, or prepare musical or dramatic productions for the U.S.O. Both can join school safety patrols, act as fire wardens or plane spotters, sell war savings stamps and bonds, and assist with salvage campaigns.

Duties open mainly to girls include caring for the children of mothers working in war plants or acting as housekeeping aides. Girls are also well fitted for Red Cross work, preparing overseas kits for soldiers and sailors, and doing clerical service in local civilian defense organizations.

Boys are being trained to help with the cultivation and harvesting of farm crops, provide messenger service for local civilian defense organizations, serve as volunteer emergency ambulance drivers, and help with home and school gardens. There are many other similar duties which Corps members can handle. In fact, whatever you plan to do during the war and after it, the Victory Corps is your chance to get the right start.

Training outside of High School

General high schools, of course, do not offer the only training programs for youth. Many students will want to look also to other groups in their search for war service training. Others will naturally have their eye toward the postwar world and the problems of working after peace returns. These students should by all means concentrate on advanced and supplementary training available through

many schools and other agencies outside of their own classrooms.

The Federal Government dug into the problem of providing training for workers in wartime as far back as June, 1940, when Congress appropriated \$15,000,000 for setting up a vocational training program. Since that time, \$160,000,000 more have been added to carry out such a program in all the states, Alaska, Hawaii, and Puerto Rico.

Government training is limited to critical and essential industries and is available free in countless public trade and vocational schools and colleges throughout the country. The training is of two types—pre-employment (for workers who are not yet employed in industry), and supplementary (for workers already on the job who want to improve their skill). Special pre-employment classes have been set up for young persons lacking work experience to qualify them for war production jobs. The following table will give you an idea of the enormous training load which government vocational courses have carried and are carrying.

VOCATIONAL TRAINING FOR WAR PRODUCTION JULY, 1941-JULY, 1942

Type of Course	Number of Workers Given Pre-Employment Training	Number of Workers Given Supplementary Training
Automotive services	27,938	38,752
Aviation services	299,654	266,297
Construction	9,059	7,044
Drafting and blueprint reading.	10,706	79,039
Electrical services	21,890	20,705
Forging	3,380	468
Machine shop	288,111	163,212
Patternmaking	9,179	6,067
Radio services	18,634	28,342
Riveting	1,786	375
Sheet metal work.	36,676	11,145
Ship and boat building.	164,367	140,776
Welding	108,884	79,226
Woodworking	2,630	43,699
Other	38,968	122,582
TOTAL	1,041,862	1,007,729



U. S. Office of Education Photo

Courses in blueprint reading are standard in almost all vocational schools throughout the country which offer training for war production workers

The number of people taking wartime vocational training in federal classes is increasing by leaps and bounds. For example, between July, 1940 and July, 1941, only 680,240 men and women received such training, less than one-third the number listed in the table on the page opposite. During this next year, the increase is expected to be even larger.

As time goes on, more and more women will enroll in these courses Uncle Sam is offering in the shops and classrooms of public schools throughout the nation. By July, 1942, women made up almost one-fifth of the total enrollment in government vocational schools. They were enrolled in all sorts of courses, the most popular subjects being aviation services, machine shop, ship and boat building, and sheet metal work.

Training for Out-of-School Youth

Young people who have dropped out of high school or have graduated are eligible for several other training programs. The National Youth Administration offers work experience training to out-of-school youth between seventeen and twenty-five years of age, and there is a special program set up for out-of-school youth in rural districts as well.

There are other important training programs available which are designed especially for high-school graduates. Among these is the Engineering, Science, and Management War Training program mentioned briefly in Part Three. The courses offered in ESMWT classes are designed to prepare workers for jobs in specialized fields of engineering, chemistry, physics, and business management. The courses are taught on a college level and both unemployed and employed people are eligible to enroll. High-school graduation is the minimum education accepted. Some of the classes are open only to people with specialized work experience as well.

ESMWT courses last for from one to four months and turn out scientific workers whose knowledge is tailored to fit a specific kind of work. Here's how the training works: A high-school graduate who wants to get into scientific work but lacks technical experience can take basic training in one of the courses and become a laboratory technician, an inspector, or some other kind of scientific, sub-professional worker. If the graduate has from one to four years of college or university training in science but lacks a degree, he can quickly prepare for more important and responsible work through ESMWT training. And if he has some scientific work experience without college training, he can prepare for a job on a professional level.

Hundreds of private commercial schools throughout the country also offer war-work training for youth. Many of these schools are trustworthy, but some of them are out to fleece their students. No one should enroll for a course in a commercial training school without first investigating it. Cut-rate schools, schools which promise jobs, and schools which offer premiums to new enrollees should be scrupulously avoided.

Apprenticeships

One last but very important method open to the youth in search



General Electric Company Photo

Many large companies engaged in war work have instituted their own training and apprentice courses to insure a continuous supply of qualified workers

of job training is apprenticeship. Before the war it was extremely difficult for a boy fresh out of school to land an apprenticeship. There was a reason for this which it is not too difficult to appreciate. The reason was that the skilled workers in most trade fields were afraid of flooding their occupation with workers and thereby lessening their own chances for continuous employment. Now, however, such trades as toolmaking, patternmaking, sheet metal work, and many others are welcoming apprentices. Have a look at pages 202, 203, 204, 205, 206, and 207.

There are almost a quarter of a million apprentices employed in the United States today. The total is rising, for in the two and a half years between July, 1939 and December, 1942, only 42,000 workers completed apprenticeship training. Since the vast majority of apprentices are between eighteen and twenty-five, this training is intended especially for youth.

There are literally dozens of trades open to the youth who wants to learn them through the apprenticeship method. An apprenticeable occupation is one which takes at least four thousand hours to learn—thus the apprentice's training must always last at least two years.

Some of the more common trades and the length of the apprenticeship period may be found in the list below:

<i>Trade</i>	<i>Years of Apprenticeship</i>
Baker	2
Boatbuilder (wood)	4
Cable splicer (electrical).....	4
Carpenter	4
Diamond cutter	2 or 3
Die maker	4
Electrician	4 or 5
Instrument maker	4
Machinist	4
Operating engineer	2 or 3
Painter and processor (aircraft).....	2
Radio technician and serviceman.....	4
Structural steel worker.....	2
Toolmaker	4
Woodworker (aircraft)	4

Training in the Armed Services

Boys who are drafted for military service need have no fear of falling too far behind in their education programs. In addition to the job and trade training facilities available to our fighting men (already discussed in Part Two), the Army is offering further educational training in a large number of subjects through correspondence to men who have been in the service for at least four months.

These courses, conducted by the Armed Forces Institute, with headquarters in Madison, Wisconsin, cost two dollars apiece and provide training in the following subjects:

Mathematics. Six courses: arithmetic, algebra, geometry, trigonometry, analytic geometry, and calculus

Business. Eight courses: typewriting, shorthand, bookkeeping and accounting, cost accounting, advanced accounting, railroad rates, traffic management

Mechanical. Twenty-five courses, including all branches of engineering, aviation, automobiles, and marine engineering

Electrical. Eleven courses: elementary electricity, industrial elec-

tricity, illumination, electric welding, and seven courses in radio, telephony, and telegraphy

Civil and architectural. Five courses: surveying and mapping, engineering mechanics, structural engineering, water work and sewage plants, carpentry

Science. Three courses: general science, physics, inorganic chemistry

Social studies. Three courses: American history, American government, economics

English. Three courses: English for men of foreign birth or parentage, English grammar, business letter writing

Armed Forces Institute work is as yet not accredited (though the Army and Navy are working out a plan whereby credit will be given for Institute work upon passing special examinations), but service men who want school credit may enroll in special college correspondence courses offered by seventy-nine colleges in conjunction with the Institute. The government pays half the cost of these courses and the student pays the other half. The Institute also has developed special tests of educational maturity which service men can take after the war. These tests will determine a man's educational learning level and most schools will probably accept their results in placing demobilized men at the right levels in their classrooms.

The college correspondence courses which may be taken include: high-school English, English composition, English and American literature, modern foreign languages, mathematics, general science, physics, chemistry, geology, geography, world history, civics, government, economics, sociology, psychology, statistics, health, vocational, technical, and professional work related to military activities.

Students who drop out of school before their education is completed should definitely plan to complete their education after the war is over. A good way to guarantee that they will be able to do so is by saving their money for peace and thus being able to afford a college degree later on. Many students who are unable to earn their high-school diplomas will be able to return to school—either by day or night—and finish up in that way.

Training through Hobbies

Formal schooling is only one method of obtaining job training.



U. S. Office of Education Photo

Exact models of enemy planes, built by model builders, are now being used by Uncle Sam in training pilots and Civilian Defense aircraft spotters

Fifty million Americans have already discovered another excellent method—"hobby-riding." Thousands of these hobbyists are busily converting for war by adapting their skills to constructive wartime work.

Recently, the model builders in the nation's schools were asked to build a half million model planes to be used by the Air Corps and by Civilian Defense agencies for training pilots and plane spotters. The first cousins of the model builders, the home workshop operators, have also pitched into the war effort. There are two million of these "basement" operators, and one-fourth of them own power-driven equipment. Uncle Sam is making a count of all these workshops to see if they can produce war materials. In fact, some shops are already working on small war contracts!

It is almost impossible to overestimate the job value of carefully selected and avidly followed hobbies. Often, workers have landed

jobs on the strength of their hobby training alone. Many an ex-radio ham, for example, is now holding down an important job in industry or with the armed forces. The Navy gives qualified hams a chance at earning petty officer ratings in a hurry. Thousands of other workers have got their starts through dabbling in art, writing, chemistry, printing, and various other fields.

Photography, the biggest hobby in America, is one which is especially loaded with war-important job value. One of our greatest shortages in the armed services is of men skilled in photography. They are needed in the Signal Corps to keep the photographic record of the Army's activities. They are needed in the Air Corps as aeronautical photographers, and in the Engineers as topographical and surveying photographers. And in many branches of the services they are needed to do darkroom development and enlargement work.

The hobbyist must convert for war if he wants to serve through his hobby. Stamp and coin collectors, for example, must start to collect war-valuable scrap metal and rubber. (See page 156.) Autograph hunters must put their energy to war use by hunting out customers for war savings stamps and bonds. All hobbyists, for that matter, must direct their efforts in job training channels, for the real value of a hobby is that it offers youth a chance to learn and have fun at the same time. In time of war it offers them something even more important—a chance to serve their country.

13. HELPING ON THE CIVILIAN FRONT

You Can Help Now

THOUGH YOUR BIG JOB as a student is to train in advance for war duties you will shoulder later, you have an immediate obligation to help the war effort now. The civilian front is as vital in many ways as the battlefield. And the civilian front needs your help. It needs all the work you can contribute. The tremendous task of building up home front morale, of supplying our war industries with scarce raw materials, of financing the war through buying bonds and stamps, of providing an adequate civilian defense, will collapse unless all Americans—young and old, men, women, and children—co-operate on the home front.

There are five main activities which all students can follow that will help the war effort most right now: co-operating in war bond and stamp drives; helping in salvage drives; co-operating in civilian defense; co-operating in 4-H, FFA, and other rural youth movements; and doing part-time, after-school, and vacation work.

Co-operating in War Bond and Stamp Drives

It takes money to win wars, because it takes money to finance wars. The billions of dollars which Uncle Sam is spending to outfit his fighting men with the tools of war must be raised in one way or another. Raising that money is not as simple a job as many people believe. There are Americans who say foolishly, "If Uncle Sam needs money to finance the war, why doesn't he just print it? He makes the money in the first place, and who would be the wiser if he paid for war materials and salaries in new paper?"

The answer to such a question can be told in a few sentences. Whenever we purchase war bonds and stamps, we pay *in cash* for a part of the war. Whenever we fail to purchase war bonds and stamps, we force the government to go into debt to pay for a part of the war by printing or borrowing money. Now, what happens when the government goes into debt? It means that in the years to come, every American will have higher taxes to pay. It means that, right now, the prices we pay for the things we buy will tend to go up. The more money Uncle Sam puts into circulation (and



OWI Photo

Selling war bonds and stamps is one of the most valuable of home-front jobs to be done, and it is one which young people can do successfully

that is inevitable if we do not smash bond-buying records) the higher prices will go. That is what causes *inflation*. When more money is available than goods to purchase, prices tend to point sky-

ward. To avoid trouble in the future, we absolutely must pay for as much of the war as we can *as we go*.

To make certain that you will do your share in the war bond and stamp drive, you should resolve that luxuries are out for the duration. The extra change in your pocket should be invested in war stamps, and those stamps should be exchanged for bonds when you accumulate enough of them. You can also help by enlisting as a salesman of stamps and bonds. You can distribute treasury literature to people and urge them to invest in stamps and bonds. You can become a part-time salesman of freedom for Uncle Sam. Our fighting men are giving twenty-four-hour-a-day service to win the war. Many of them are giving their very lives. Surely every American on the home front can give up luxuries—and even necessities if needed—to furnish fighting men with the weapons they must have for victory.

Helping in Salvage Drives

The scarcity of vital materials brought on by the war has driven home one all-important fact to every American—*there is no such thing as junk*. Old rubber, old metal, old rags have become the food which we must feed into our war industries if they are to continue pouring out record-breaking quantities of war materials.

Back in the summer of 1941, the nation was shocked to learn that we were running short of aluminum, that light, tough metal so suitable for aircraft. Right then and there, the Boy Scouts of America set out to teach us all a lesson in scrap salvage. The Scouts rang doorbells, raided ash heaps and basements. When they were through, they alone had collected eleven million of the twelve million pounds of aluminum gathered in the nationwide pots and pans drive—enough to make 1,700 planes! That was salvage with a capital “S” and a good example of the success that can be achieved when young people organize and plan to bring in scrap materials.

The aluminum shortage, severe as it seemed, was mild compared to a second shortage which developed soon afterwards and which still plagues the nation today—rubber. Though Uncle Sam owns the world’s richest supply of raw materials, rubber is his one major wartime Achilles heel. For years he has imported all his crude rubber, more than 90 per cent of it from the Orient alone. But the Japanese hordes, overrunning the rich rubber lands of Malay and the Dutch East Indies, have swallowed up our source of rubber

imports. That's why you need special permission to get a new automobile tire. That's why rubber bands and pencil erasers have suddenly become so scarce.

Every bit of the precious crude rubber reserves we have on hand is being parceled out only to war-essential uses. The Army and the Navy have practically a monopoly on rubber priorities. Never in our history has there been a rubber hunger to compare with that of our fighting forces today.

Army trucks have from four to ten rubber-tired wheels, plus a couple of spares. The tires on one big truck alone can gobble up one thousand pounds of rubber!

An ordinary fighting plane has some four hundred rubber parts, ranging from de-icers to self-sealing rubber fuel tanks. And the tires on a Flying Fortress weigh a hundred pounds each, seven times as much as an ordinary automobile tire.

Rubber is needed to make collapsible boats for landing attack troops, and to produce bags to hold explosive powder inside big shells. It is needed to make the kind of life raft on which Captain Eddie Rickenbacker floated for twenty-two days. A soldier's rain-coat contains two pounds of rubber. A twenty-eight ton tank eats up enough rubber to make 124 tires. There's enough rubber in a ten-ton pontoon bridge to make 260 tires. And 17,000 tires could be made from the rubber in a single battleship!

For reasons such as these, the rubber shortage is more critical than any other shortage we are now experiencing, and rubber conservation has become an *obligation* of patriotism. In a few years, because of synthetic rubber production and the cultivation of new rubber-bearing plants (guayule, rabbit brush, even dandelions and milkweed), we may be free of rubber worries. But here and *now* we are forced to fight a nationwide war against rubber waste and conduct a national emergency hunt for scrap rubber.

Experts estimate that there is a bonanza of some 500,000 tons of reclaimable rubber to be found in the United States every year! Many of our garages are littered with "bald" tires. There are hundreds of items that have outlived their usefulness which can be turned into the rubber scrap yard. Even if most of us can't go around gathering up old tires—which are, of course, the largest source of reclaimable rubber—we can do our bit toward rubber salvage by using rubber items sparingly and by being on the lookout

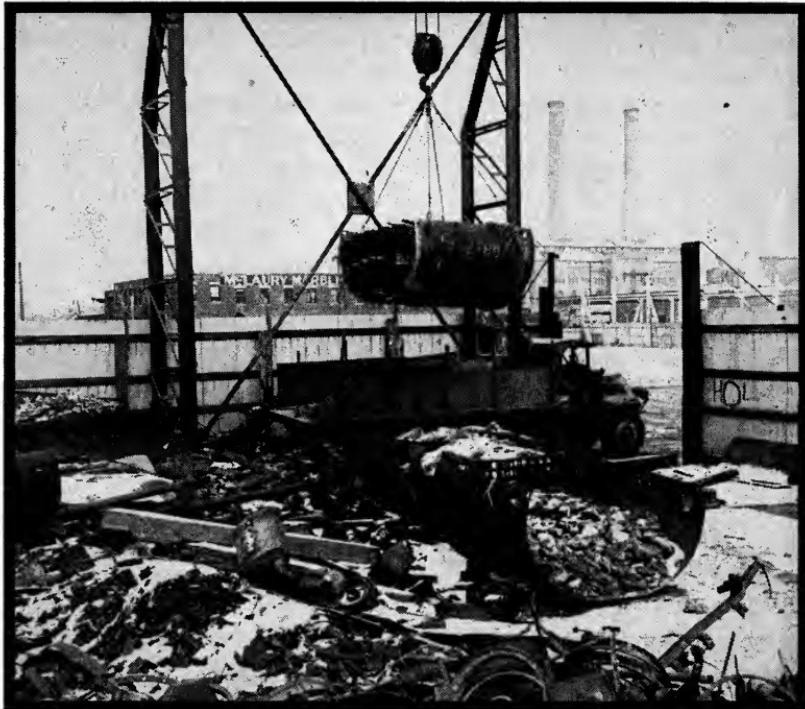


Photo from Institute of Scrap Iron and Steel

High-school and even grade school students can be of tremendous help in the collection of scrap, without which our steel mills could not operate

for scrap rubber. In the past, 30 per cent of our rubber consumption was reclaimed, but now we must increase this ratio as rapidly as we can. That increase will be impossible unless our rate of scrap rubber collection is stepped up substantially.

Recently, too, the United States has been beset by another critical shortage—scrap metal. Today our steel mills have only a few weeks' supply of scrap on hand, and when one considers that "junk" provides a third of our copper, nearly a third of our tin, and more than a fourth of our steel, even in normal years, it is evident that there is real danger ahead unless our scrap reserves are speedily and steadily built up.

Every attic, every garage, every farmyard is a mine of scrap metal.

All about us thousands of tons of scrap await gathering. If every student set himself a goal of so many pounds of scrap metal a month, we would soon blast through the threatening scrap bottleneck and relieve the pressure from our production experts who are worrying *how* and *when* the metal materials of war can be delivered to our fighting men.

Co-operating in Civilian Defense

All over the United States home-loving, enemy-hating, patriotic Americans have banded together to carry on a host of wartime duties which are intended to minimize the effects of any enemy attack. These duties are not the private property of doctors, policemen, firemen, and other older persons. They offer opportunities galore to young people who want to pitch in and do their share of the work for the Citizens' Defense Corps. Typical of the jobs in civilian defense are these:

An *air-raid warden* works hand-in-hand with the police, watches out for telltale lights during blackouts, reports fires and fallen bombs, directs civilians to shelter, and administers basic first aid in case of accidents.

The *auxiliary fireman* helps our regular firefighting forces to prevent the spread of fires.

Bomb squad members have the risky job of finding, removing, and "killing" unexploded bombs or bombs which have delayed-action fuses.

Drivers' corps members offer their cars and services to first aid and casualty clearing stations. They also assist other Civilian Defense personnel in getting around.

Emergency food and housing corps members provide food and shelter for persons whose homes have been damaged or destroyed. Young girls are well suited for work in this branch.

Fire watchers keep a sharp lookout for fire bombs during an air raid, and instruct citizens in fighting fire bombs.

Nurses' aide corps members are specially trained by the Red Cross to serve in hospital wards, public health, school health, and industrial hygiene offices.

Messengers are assigned to first aid posts, hospitals, fire stations, and other centers to get messages through when and if the usual types of communication break down or are suspended.

As a shining example of what young people can do in civilian defense there is the record of the American Youth Reserves (A.Y.R.) —a young people's branch of the Citizen's Defense Corps. In the Chicago area alone, twenty thousand boys and girls have formed an A.Y.R. group to help the civilian defense organization in its important work. Through specially trained leaders who conduct regular meetings, these boys and girls carry out such campaigns as salvage and conservation drives, sales of bonds and stamps, working in victory gardens, and helping to take care of younger children. They train to serve their country by making themselves physically fit, by learning about air-raid protection, safety, first aid, home nursing, and the principles of democracy. The young people of San Francisco and some other cities have also done outstanding work along these lines.

Neither the O.C.D. nor the A.Y.R. asks members to pay dues. All these organizations want is some of your time, part of your energy, and a lot of your earnest co-operation. You owe it to yourself and your country to co-operate.

Co-operating in 4-H, FFA, and Other Rural Youth Activities

The nation's six million farms and their workers are working just as hard for winning the war and are producing just as vigorously as the more publicized laborers in the cities.

Not to be outdone by their elders the farm youth organizations—the 4-H Clubs and the Future Farmers of America, totaling 1,500,000 and 240,000 members respectively—also are doing their bit on the food production front. In peacetime these organizations are primarily interested in better farming and a better life for farmers. But in wartime they direct their energies, their ideals, and their minds toward the main goal of winning the war.

The young folks on the farms are working at least as hard for victory as their brothers and sisters in the urban areas. They're doing it in the usual ways of scrap drives, war bond and stamp sales, and entertaining in their communities for the U.S.O. and similar near-by wartime organizations. But in addition they're also doing something even more important—*producing*. They're producing bumper crops in the fields, bumper meat and milk in the barns and sheds, and bumper health in their own homes. This is the production we need to win the war, just as much as munitions and men.



U. S. Office of Education Photo

Farm members of the Victory Corps are doing their part in our war effort by increasing the production of cattle and hogs, grain, and dairy products

Last year, for instance, the members of the 4-H Clubs produced vital food in quantities like this: 2,000,000 bushels of garden produce; 5,500,000 chickens, ducks, geese, turkeys; 4,000,000 pounds of peanuts; 11,000,000 jars of fruits and vegetables; 75,000 head of cattle.

In addition, 88,000 4-H members made handicraft articles for the home or farm; 90,000 constructed or repaired farm and home equipment; 235,000 serviced and operated various types of farm or home mechanical equipment; and 500,000 made and repaired their own clothing.

Another slant on the work of farm youth is found in some of the activities of the Future Farmers of America. They have purchased more than \$1,500,000 worth of war bonds and stamps. And they have hung up a scrap collection record like this: 2,768,000



F. S. A. Photo by Lee

Vacation work on farms during wartime is a patriotic job, for today farmers must raise larger crops than ever before with fewer helpers and laborers

pounds of rubber; 606,000 pounds of rags; 77,000,000 pounds of scrap metal.

The farm club members who lend their strong arms to the war effort do more than merely help Uncle Sam. Through the activities carried on by the 4-H Clubs and the FFA, they learn about farming as a career, occupation, business, and way of life. In addition they learn to conduct and participate in meetings, to speak and think "on their feet," to buy and sell on a co-operative basis, to earn money on their own initiative, and to take an active part in the civic affairs of their communities. Leadership, patriotism, initiative, independence, and the ability to co-operate—these are some of the qualities developed by young people who are active in 4-H Club and FFA work. More work of this type is needed in every part of the country.

Doing Part-Time, After-School, and Vacation Work

Students shouldering the obligations that come to all citizens on the home front can perhaps make their most significant contributions by working at jobs during their free time. Our war industries are drawing more and more workers away from their peacetime occupations. Many workers have already left non-war jobs to take jobs

in war industries. There is a growing shortage of labor on our farms because so many farmers and laborers have left to take over high-paying city jobs. Many women have left their families to man machines. Thousands of others who are sorely needed on the production lines cannot leave because they have families to care for. Each of these situations presents an opportunity for high-school youth to contribute a valuable wartime service by using their spare time to help the nation meet its immediate manpower needs. They can do this in three main ways:

1. *By replacing workers.* Summer vacation, Christmas, and after-school and week-end work will relieve workers needed in the armed services and war industries. Even if students cannot work longer than a few weeks or months during the year, those months will be invested for victory.

2. *By helping in agriculture.* Getting the crops in is a job many city students have been learning since the farm labor shortage began. If we are to feed our fighting men, our Allies, and our civilians at home, we need the services of every hand we can put to work on the land. Young people are one of the principal solutions to the farm labor shortage, a fact which was dramatically proved by North Dakota youth in the fall of 1942. There, four thousand college students and thousands more from high schools went into the fields to bring in the valuable wheat, potato, and sugar beet crops. Many of them were city boys and girls who never before had seen a hoe or a threshing machine. But they got the crop in, just as thousands of young people after them will do all over the forty-eight states this year.

3. *By releasing housewives and mothers for jobs in industry.* There are thousands of women ready and able to work who cannot do so because their household duties tie them down. Any school girl who lives out as a mother's helper and thus releases a woman for industrial work is contributing a real service. Housemaid's work is not beneath any one, and in wartime it is an important pursuit indeed.

Another way in which high-school girls can help wartime mothers is by working in day nurseries. Recently, many such nurseries have been started in defense areas throughout the country to care for young children while their mothers work in war plants, free from worry over the welfare of their youngsters.

14. YOUR PERSONAL INVENTORY

The Best Job Is the Right Job

IT'S YOUR SOLEMN RESPONSIBILITY in a democracy at war to train for a job in the war effort. We have already pointed out that most boys will serve by fighting and girls will serve by working on the home front. Before that time comes, however, both boys and girls have a more immediate responsibility—that of selecting some war occupation for which they are reasonably well fitted, and beginning to train for it as soon as possible. Only in that way can they contribute their best to the war effort.

Whenever a man holds a job in which his abilities are not taxed to the full, he is wasting part of his talents. The only efficient working policy for the United States must be built about this rule: *the right man on the right job at the right time*. To make the most efficient use of your own talents in the war effort, you must measure your own future job by the same yardstick. You don't want just any job. You want the right job—the best job for you. You want to be ready for it at the right time. And the right time is before you are ready for service, for boys are marked for war duty as soon as they reach eighteen and most girls must be prepared to serve as soon as they leave high school.

The Importance of Self-Analysis

You are a distinct individual. There is no one else in the world quite like you, and certainly there is no one else quite so important to you! What is it you want out of life? Do you want to serve your country? How? To the best of your abilities, you say. What are your abilities?

Do you understand yourself? That is not an idle question. How much, after all, do you really know about yourself? Have you taken stock of yourself recently? What are your special strengths? What are your weaknesses? Would you serve the war effort best as a private in the infantry, at the command of a squad, on the factory line, or in some professional job? How do you know that the answer you give to this question is the right answer? How can you know until you've taken stock of yourself in an orderly fashion step by step?



U. S. Office of Education Photo

School libraries have books on vocational information from which students can learn the qualifications necessary for occupations which interest them

In taking stock of yourself, you must proceed as carefully as a storekeeper does when he takes an inventory of the stock on his shelves. But instead of evaluating, measuring, and listing different items of merchandise as a storekeeper does, you must evaluate, measure, and list your own interests, aptitudes (your natural talents), and abilities (which include aptitudes that you have developed through training and study). Your personal inventory, then, will include a close examination of all the things that make you tick—the good and bad, the strong and weak, the brilliant and dull sides of your make-up.

Personal stock-taking can and should be a fascinating task. All through life you will find yourself taking stock of others, trying to puzzle out the different sides of their natures. How much more interesting it should be, then, to give yourself "the once over," to learn who and what you really are. In addition to being fascinating,

personal stock-taking can also be tremendously helpful to you in these troubled times. For unless you know yourself and have a complete and unprejudiced record of your interests, aptitudes, and abilities, you will not be able to fit yourself for the right war job—the job which best fits *you*.

Generally speaking, you can carry out your personal inventory in three main steps, each of which demands that you ask and *answer* an all-important question.

Step One: How's Your Health?

The first question you must answer in taking your personal inventory is: How's your health? Your health may be the most important single factor when you are looking for a war job. You know, for example, that you couldn't land a job wrestling freight cargoes on a dock if you weren't muscular and tough. You couldn't become a marine, or a pilot, or a Navy officer, or a thousand and one other things unless your health were A-grade. On the other hand, there are hundreds of jobs in which poor health or even actual physical handicaps are not important barriers. You cannot make even a tentative occupational choice that will have any real significance, however, until you have first taken stock of your health.

The proper beginning to your war preparation should be a complete physical examination. Your family doctor or any other qualified physician can examine you. Be sure that your examination is as complete as possible. An exam covering all the following points is desirable:

1. A general physical, top to toe, examination, including blood pressure, heart, lungs, reflexes, and so on
2. A tuberculin test which will tell if you have ever been attacked by tuberculosis germs and if further examination of your lungs is necessary
3. A chest X-ray. This is particularly important if the tuberculin test is positive
4. A blood test
5. An eye examination
6. A dental examination

The big rule about health is this: catch and treat a disorder early enough and it can usually be cured. Little ailments left unchecked

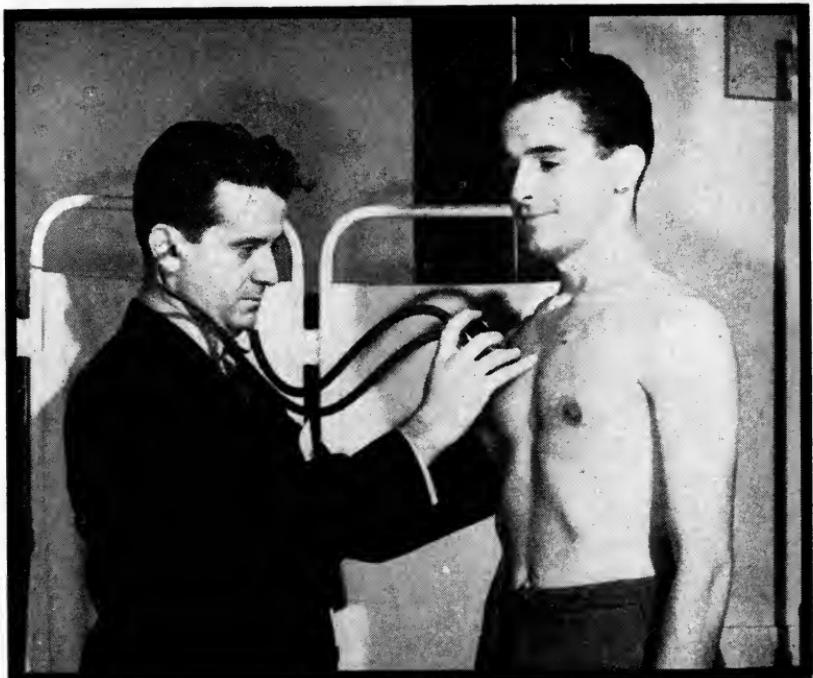


Photo by U. S. Civil Service Commission

Today, when perfect physical health is an asset to your government, you should have a medical examination so that defects can be corrected at once

often develop into major afflictions. There are millions of Americans today who cannot render full service to their country because their health has been sapped by sickness. The price we have paid for this careless neglect has already been enormous. Of the first two million men examined under Selective Service, fully half were found unfit for military combat service! Of these, 500,000 had defects that were sufficiently small so that they could finally be accepted for limited service. But the rest were rejected completely! Of those rejected, 400,000 men were physically unfit. Think of it—Uncle Sam had to give up almost thirty divisions of fighting men because they weren't healthy enough to meet Army physical standards!

A large majority of these rejected men suffered from common

ailments which could have been cured had they been treated in time. Here is a list of the ten major physical disabilities these men showed, in order of frequency:

1. Dental defects
2. Defects of the eyes
3. Defects or diseases of the heart
4. Musculo-skeletal defects, such as curvature of the spine, stiffened joints, and similar ailments
5. Venereal diseases
6. Mental and nervous diseases
7. Hernia
8. Defects of the ears
9. Defective feet
10. Defects of the lungs, including tuberculosis

In another study recently made of young people employed under NYA, nine out of ten were found to have health defects, *most of which could have been remedied had suitable treatment been made available early enough.* There, in a sentence, lies the big reason why you owe it to your country and yourself to take stock of your health *now.* Your strongest desire to serve will be blasted if you are not physically fit for service.

Step Two: What Are Your Interests?

Once you have received a full report on your physical condition from the medical authorities, you are ready to examine another side of yourself—your interests—particularly those interests which have to do with jobs. An understanding of your interests is especially important because it has been discovered that people usually work hardest at things which interest them most. It goes without saying how essential hard work is to success on the job.

You understand, of course, that people differ considerably in this matter of interests. In your own group, for example, you will find friends who enjoy one thing and others who enjoy something quite different. Check on your group the next time you are planning a social affair. You will surely note that some will favor parties, others movies, some dancing, and so on. Those are all examples of differences in social interests, and the same kinds of differences are equally evident in the *vocational* interests of individuals.

Unlike social interests, however, vocational interests are not so obvious or so easy to measure. Often many of us are not quite sure what we'd like to do for a living. Our minds are a jumble of *conflicting interests*. Mary would like to be a nurse—she *thinks*—but, then, she'd also like to be a teacher, or a statistician, or a movie star. George would like to be a great writer, a professor of languages, an athlete. How are Mary and George really to know where their major vocational interests lie?

It has been found that the vocational interests of most people fall into various broad vocational areas rather than into specific jobs. For example, the average high-school youth is more likely to be interested in *scientific* work rather than in a specific scientific occupation, such as medicine, pharmacy, mechanical engineering, and so on. In the same way, young people show interest in other broad areas—such as literary work, clerical work, and social service, rather than in specific jobs within those fields.

Vocational specialists have worked out special interest-measuring tests which people can take to discover in what broad areas of vocational life their interests lie. By examining the interests of many people who have been successful in various occupational fields, they have shown how important interests are in selecting the proper vocation. One of the most popular of these tests, the *Kuder Preference Record*, divides these broad areas into nine categories of interest:

1. *Scientific*. This includes such occupations as chemist, bacteriologist, criminologist, dentist, and veterinarian.
2. *Clerical*. This includes such occupations as bookkeeper, stenographer, business machine operator, typist, and office manager.
3. *Mechanical*. This includes such occupations as blacksmith, tool and die maker, machinist, airplane mechanic, and machine operative.
4. *Computational*. This includes such occupations as mathematician, statistician, and accountant.
5. *Literary*. This includes such occupations as novelist, editor, newspaper reporter, correspondent, and English teacher.
6. *Musical*. This includes such occupations as composer, musical arranger, conductor, and musician.
7. *Artistic*. This includes such occupations as commercial artist, fashion designer, interior decorator, and artist.
8. *Social service*. This includes such occupations as social worker, history teacher, minister, and sociologist.



Some tests can give an accurate estimate of your abilities and interests and help you decide upon your career. These students are taking the Kuder test

9. *Persuasive.* This includes such occupations as salesman, agent, lecturer, demonstrator, and radio announcer.

The best way you can find out about your own interests is through taking an interest test (your teacher can see that you get the chance), but there are other ways as well. One of these is through hobbies, for since a hobby is something one does for pleasure in his spare time, it is necessarily something one is interested in. A boy whose hobby is building model airplanes or working in a home workshop, certainly demonstrates a high degree of mechanical interest. In the same way, a girl who spends her spare time writing poetry and short stories demonstrates a strong literary interest. Very often, in fact, a combination of a hobby and high grades in certain school subjects is an excellent key to a student's interests. Here, again, your teacher or counselor can help you, as can other adults who know you well.

Keep this matter of vocational interests in mind when you come to selecting your program of war job training, as well as your later life career. Don't worry too much about a specific occupation. If you select a broad vocational field and take the right school subjects to help you prepare for it, you will later find a great many individual occupations within the field which your aptitudes and abilities will qualify you to enter.

Step Three: Do Your Interests Jibe with Your Aptitudes?

Your personal inventory is well started when you have examined your vocational interests. Extensive research shows, however, that many people are interested in fields for which they have very little native talent or *aptitude*. When this error is not rooted out early, it brings all kinds of complications later. We all have seen such sad cases as the unmusical musician who has given his life working at an occupation he can't master, the storekeeper who can't sell, the policeman who can't police, the farmer who can't farm. In examining recruits, the Army has uncovered such misfits by the thousands. Through its tests it has also helped to reroute soldiers into the types of work for which they are better fitted. An example of this good work is found in the lawyer who, upon being tested and examined, turned out to have strong aptitude for mechanical work and soon became a top-notch instrument repairman!

America can no longer afford vocational failures of these kinds. Remember the rule: the right man for the right job. In short, do your interests jibe with your aptitudes?

How can you tell? There are several ways of telling, the most obvious being to check your interests against your marks in school, plus your record outside of school. For example, if your major interest is literary, and your marks in English are way down, it would be a safe guess that you're in danger of following a vocational will-o'-the-wisp. On the other hand, a crackerjack student of physics and chemistry whose major interest is scientific, might be justified in thinking himself on the right vocational track if he were training for a scientific job.

There is also another method you can use to help you discover your aptitudes. That is through taking special tests—particularly the kinds of tests which are closely related to the world of work. These aptitude tests are especially designed to help workers analyze their native abilities. They can go a long way toward giving you the pertinent answers about yourself that you need to know to start preparing now for the *right* job when you leave school. While none of these tests is infallible, they have proved especially useful in pointing out the types of occupations persons *cannot* do successfully.

Actually, it has been found that most of us possess a great many more aptitudes than we think. In other words, we have native talent

for more than one type of work, and only have to build those aptitudes into *abilities* by study, training, and experience to make them vocationally valuable. Though we do not know much about some of these aptitudes with which we are endowed, we can measure others of them fairly well.

On the basis of a careful analysis of the most common war jobs in industry and in the armed forces, a knowledge of one's relative aptitudes in the following areas has been found especially important in making wise vocational selections:

1. *Academic aptitude.* Broadly speaking, this aptitude is the one which enables students to earn high grades in school. It can be broken down into two main divisions: a) *linguistic aptitude*, which is verbal talent and is found in people who are good at using and understanding words—a very important aptitude because of its relation to school success, and b) *quantitative aptitude*, which is aptitude of the problem-solving type, and consists of the ability to analyze problems and work out quick, easy methods of solving them. Students who excel at arithmetic, algebra, and geometry often have a high degree of quantitative aptitude.

2. *Sense of space relations.* This aptitude is the ability to visualize geometric shapes and forms in space. It is not readily understood and is hard to define, but it has a great deal of bearing on an individual's success in all kinds of mechanical and scientific jobs. An engineer often needs a highly developed aptitude for space relations, and for such jobs as architectural drawing and airplane piloting it is an absolute must. People who are strong in this aptitude usually can take apart motors and machines and put them together again fairly easily—because they can *sense* just where each loose part belongs. There are several tests designed to measure this space relations factor, and it plays an important part in various Army and Navy tests.

3. *Manipulative dexterity.* People with high aptitude in manipulative dexterity are "clever with their hands"—and those with little aptitude in it are often referred to as all thumbs. This aptitude is extremely important on many mechanical jobs, and consists of the following three types: a) *tip-of-the-finger dexterity*, which involves extremely fine co-ordinated movements of the fingers, a talent which is valuable in most types of small assembly work, such as putting together airplane instruments. A good surgeon needs a



Pittsburgh Public Schools Photo

This type of test measures mechanical aptitude, which consists of manipulative dexterity, sense of space relations, and several other factors

high degree of this dexterity, and any commercial student should be able to see how important it is in typing and other clerical machine jobs; b) *manual dexterity*, which involves co-ordination of the whole hand as a unit. This dexterity is important in all kinds of bench work. Carpenters, machine operators, and others who do manual work require a good deal of manual dexterity; c) *gross dexterity*, which involves general bodily co-ordination of the arms, legs, and other muscles. Plumbers, truck drivers, firemen, longshoremen, and others who do heavy work with their *whole bodies* must have good gross dexterity. It is also an important factor in success in many types of athletics.

In each of the three types of manipulative dexterity, the factor

of speed is also important. Manipulative dexterity can be measured by tests designed especially to measure that factor.

In addition to the three major aptitudes mentioned above, there are various other special aptitudes. At least one of these deserves mention here. That is *practical judgment*—the ability to do the right thing at the right time. Another name for this aptitude is common sense, and people who have it usually are able to examine the two or three or four choices open in a given situation and select the right one quickly.

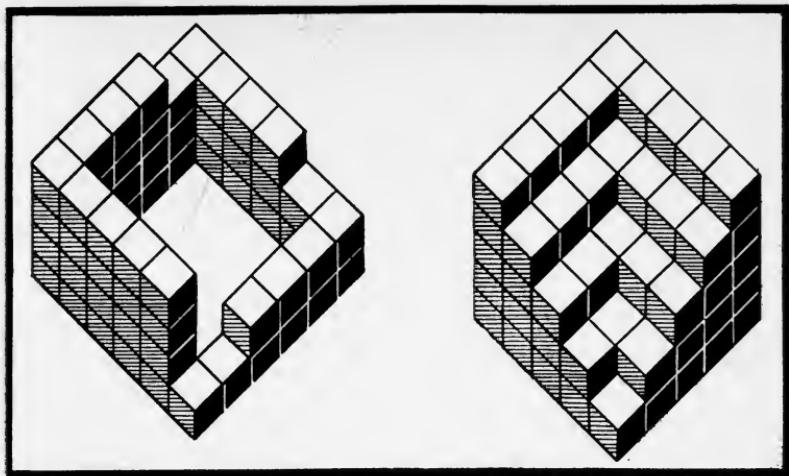
This aptitude is perhaps the most important in the selection of men and women for leadership. An Army officer who must make life-and-death decisions for the men under him needs a high degree of practical judgment. So does the foreman in industry, the office manager, the sergeant, the straw boss, the section leader, the junior executive. Even the workers and fighters in the ranks need it, for often they are forced to operate on their own, without immediate supervision, and must then make decisions and pursue actions which may have great bearing on the outcome of the total effort in which they are involved.

Let us see how aptitudes enter into the practical war job situation. Every soldier entering the service takes the Army General Classification Test. While the contents of this test are a military secret, it is no secret that the test is designed to measure three main factors: linguistic aptitude, quantitative aptitude, and the sense of space relations. Though the test is changed from time to time for military reasons, it is a safe guess that boys who will take it six months or even several years from now will find that it leans heavily on word questions, mathematical problems, and special geometric designs.

The word questions (definitions, synonyms, antonyms) measure the soldier's linguistic aptitude. A typical question might read something like this: The word *infamous* means most nearly: 1) unattractive, 2) notorious, 3) stupid, 4) silly. You are supposed to pick the correct word.

The mathematical problems measure his quantitative or problem-solving aptitude. Typical problem: If a student has a mark of 82 in History, 86 in English, 78 in Geometry, and 80 in Science, what mark must he earn in French to make his average 85?

And the geometric designs measure his sense of space relations. (For a typical item, see the illustration across the page.)



How many different cubes can you count in each of the illustrations? Designs like this are included in Army tests, to measure space relations

How well you do on the test has a great deal to do with what your job in the Army will be. For example, only soldiers who score 110 or better on the test are eligible for officers' training. A high score marks you for bigger and better things. To date, about 40 per cent of the recruits have attained such a score or better.

In industry, too, your aptitudes will have great weight in determining your future job success. As an inexperienced worker, you may be given some tests before you are placed on a job. And in these tests, the same three factors will be all-important. They will not only indicate where you are to be placed immediately, but also will give your boss an idea of your potential worth to the organization. Score high, and he may well mark you as a potential supervisory or even junior executive material. Score low and the best you can hope for is a simple, menial, dead-end assignment.

The standing rule the government is developing for many war workers is this: no worker is to change his job unless he does so to take on more important work. In other words, the worker with superior aptitudes is not penalized as is the worker with inferior aptitudes. He is not so likely to be frozen on the job. He can move up as fast as his abilities warrant.

15. CHOOSING YOUR WAR JOB

Where Do You Fit?

CAREFUL PLANNING of your wartime career is the most important job you face as a student. And because wartime planning is necessarily a speeded-up process, your problem is much more pressing and difficult now than it was for the students who left school in pre-war years.

There are normally more than eighteen thousand different ways to make a living in the United States. Choosing from among them is a complicated problem under any circumstances. In wartime, however, a whole host of military and civilian occupations shoot to the fore to challenge the job seeker's attention and complicate his problem even more. We have already seen that in the Army alone, for example, there are more than two thousand different occupations. The Navy has hundreds of its own, and industrial war jobs run into many thousands more. Not all of these jobs are open to beginners, of course, but how is the student to choose from the huge number which are?

Matching Aptitudes and Abilities with Job Requirements

In selecting an occupation as a life's work, the rule is: *work from the general to the specific*. What does that mean in terms of your own occupational choice?

Though the working world may look like a crazy jumble of jobs, you can unscramble that jumble if you go about the matter systematically. Your first job is to select from the pile one or two broad *areas* of work in which you think you might like to make your choice. If you have already analyzed your interests and aptitudes by the methods outlined in Chapter 14, will not find it difficult to make that tentative choice of one or two broad areas. For example, if your major occupational interest is mechanical, and you have shown sufficient quantitative aptitude and space relations sense to warrant following a mechanical career, you could let that fact help you in making your broad area choice. Tentatively then, you would choose to land a job involving mechanical work functions—it might be blacksmithing, tool and die making, operating a machine, working in building construction, or one of other mechanical types of activity.

That tentative choice does not pin you down, and you should not let it do so until you have learned more about yourself and the job market. You don't want to make your occupational leap before you've taken a good, long occupational look. Carrying out our example, let's assume that you stand on the brink of the occupational world with a tentative mechanical choice. This is war, remember, and that means that you will be limited in the amount of training you can get until victory is won. Therefore—discard your fond dreams of becoming a skilled tool and die maker or even a blacksmith. You'll need years of training to qualify for such jobs, and Uncle Sam wants you to begin working just as soon as possible. The types of jobs open to you after only a limited mechanical training may not be glamorous, but they are important. Moreover, you can obtain additional training on the job, whether you enter the armed services or industry, and your mechanical choice now will have an important bearing on what you can do after the war is over.

If you are a young man, count on immediate military service after graduation and hope to get a chance to practice mechanical work once you're in uniform. There are literally hundreds of mechanical jobs in the Army and Navy, you know. Military work will give you opportunities to learn and develop the very skills that may lead to a well-paying civilian mechanical job after the war.

Suppose—to take another example—that you're a young woman with an interest in clerical work and have the aptitude to back up that interest. Many clerical jobs are important in the war effort, and there are plenty of other jobs on the home front where you can fill in for drafted men. Fortune is with you, for unlike the boy in the previous example, you can eat your cake and have it, too. You can land a clerical job in a war industry or with the government and thus serve your country and your career at the same time!

Students whose broad area choices are mechanical or scientific or clerical are in a much better position today than those who lean toward the arts, because there are literally thousands of jobs in the war effort in which these interests are important. Suppose you want to be an engineer and can't get to college for the duration. You can still build your career for the duration by landing work that involves mechanical drafting, blueprint reading, work with machinery and tools, and a whole host of operations which will serve to make you a better engineer when you complete your education later on. Budding



Photo by U. S. Army Signal Corps

Doing the job for which you are best fitted is today more important than ever before, because Uncle Sam has no place for square pegs in round holes

scientists, too, can get real work experience in elementary scientific war jobs that will give them a taste of working in their chosen fields. The same rule holds for students whose major interests are computational, social service, and persuasive. There is room in the war effort for all kinds of people with all kinds of interests and aptitudes.

Getting Specific

Careful study has revealed that the occupational picture in wartime isn't really as complex as it might seem. The student need not wade through the many thousands of jobs open in military service and in war industry in search of a job he can handle. To begin with, it is possible to eliminate thousands of jobs from his outlook, because these jobs are either too scarce or require too long a training period. For example, foreign language translators are badly needed today, but few youths of high-school age are going to be allowed to spend the next five years of their life studying Japanese or German in order to land a job in Army or Navy intelligence. Such jobs are obviously beyond their immediate wartime reach. By the same rule,

thousands of other jobs may be eliminated from the list of jobs which students can land immediately or after taking short, intensive training courses.

Accordingly, the authors have narrowed the thousands of war-service jobs (both fighting and working) down to a list of 383 major common occupations which are open to young people who lack extensive experience or training. These occupations are broken down into military jobs, civilian war jobs, and civilian jobs not directly essential to the war effort. These jobs include many which young people often will land in their first job hunts, for they are being given up by older workers who are going into war industry or stepping up to better positions. Civilian jobs are also listed by the type of training you will need to qualify for them. A short description of the duties performed in each job is also given. While the list contains a large proportion of the more common beginning war jobs open to youth, it is not intended to cover all wartime job possibilities.

Among the jobs listed are 144 fighting jobs (50 in the Army, 25 in the Army Air Corps, 49 in the Navy, 20 in the WAACs and WAVES) and 239 civilian jobs (71 for which ordinary pre-employment training can qualify you, 17 for which ESMWT training can qualify you, 47 other jobs for some of which longer and more specialized training is necessary, and 104 supplementary civilian jobs). All these jobs are listed in the appendix, beginning on page 190. They have been carefully prepared and will well repay your careful study.

16. YOUTH AND THE POSTWAR WORLD

The Peace We Seek

Training for war work—*working* at war work—succeeding at war work—these are the only activities that count today, but they will not always be. Our gigantic war effort, into which we are pouring all the strength of our united nation, is dedicated to a purpose beyond merely waging and winning a war. We also have a deeper purpose in mind, and the achievement of that purpose will give real meaning to the work we do. That deeper purpose is peace, and with it, the establishment of a postwar world in which the ideals we cherish will be the ideals of all mankind.

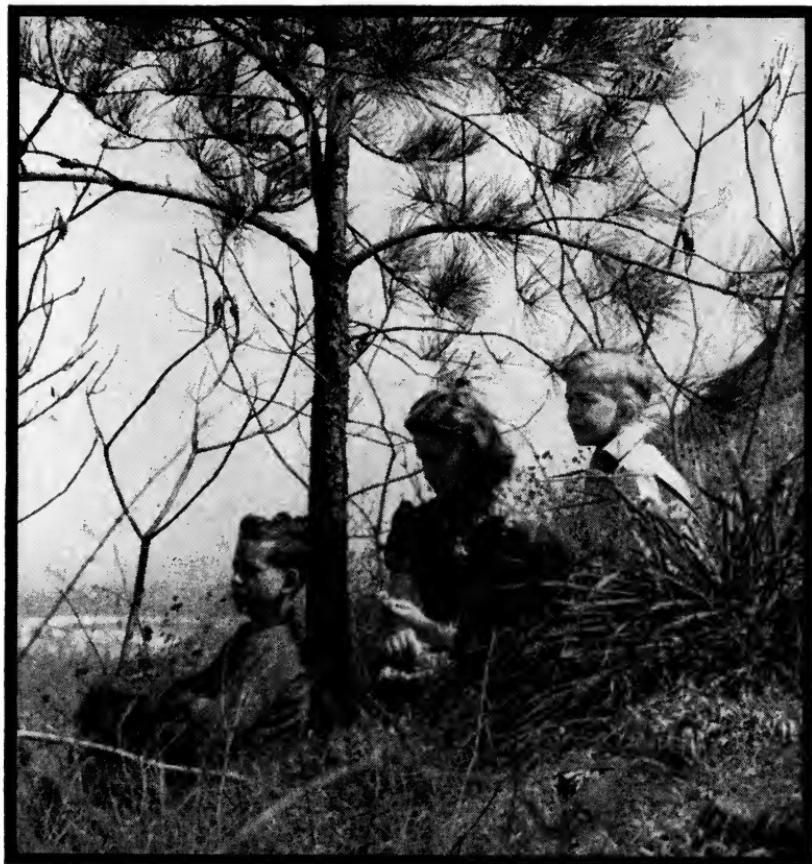
What kind of peace do we seek?

Vice President Wallace—half in fun and half seriously—put it this way: “The object of this war is to make sure that everybody in the world has the privilege of drinking a quart of milk a day.”

The Vice President went on to say:

Some have spoken of the “American Century.” I say that the century on which we are entering—the century which will come out of this war—can be and must be the century of the common man. Perhaps it will be America’s opportunity to suggest the freedoms and duties by which the common man must live. Everywhere the common man must learn to build his own industries with his own hands in a practical fashion. Everywhere the common man must learn to increase his productivity so that he and his children can eventually pay to the world community all that they have received. No nation will have the God-given right to exploit other nations. Older nations will have the privilege to help younger nations get started on the path to industrialization, but there must be neither military nor economic imperialism. The methods of the nineteenth century will not work in the people’s century which is now about to begin. . . .

The principles upon which we will build the new world after the war have been clearly stated by President Roosevelt. In his address to Congress, January 6, 1941—eleven months *before* Pearl Harbor—the President dedicated our nation to the preservation throughout the world of the *four freedoms of man* as follows:



Victory will mean that people can enjoy the privilege of living without fear

The first is freedom of speech and expression—everywhere in the world.

The second is freedom of every person to worship God in his own way—everywhere in the world.

The third is freedom from want—which, translated into world terms, means economic understandings which will secure to every nation a healthy peacetime life for its inhabitants—everywhere in the world.

The fourth is freedom from fear—which, translated into world terms, means a worldwide reduction of armaments to such a point and in such a thorough fashion that no nation will be in a position to commit an act of physical aggression against any neighbor—anywhere in the world.

This creed of the four freedoms was subscribed to by all of the United Nations as a guide for victory and peace. President Roosevelt expressed the beliefs of all of them when he said:

The four freedoms of common humanity are as much elements of man's needs as air and sunlight, bread and salt. Deprive him of all these freedoms and he dies. Deprive him of a part of them and a part of him withers. Give them to him in full and abundant measure and he will cross the threshold of a new age, the greatest age of man.

These freedoms are the rights of men of every creed and every race, wherever they live. This is their heritage long withheld. We of the United Nations have the power and the men and the will at last to assure man's heritage.

The belief in the four freedoms of common humanity—the belief in man, created free, in the image of God—is the crucial difference between ourselves and the enemies we face today. In it lies the absolute unity of our alliance opposed to the oneness of the evil we hate. Here is our strength, the source and promise of victory.

In August, 1941, President Roosevelt and Prime Minister Winston Churchill of Great Britain, held their historic meeting at sea. There they drafted a set of eight common principles on which their two nations based their hopes for a better future for the world. This set of eight principles is known as the Atlantic Charter. In it the United States and Great Britain stated that they sought no territorial gains; that they favored a system whereby the peoples of the world determined their own governments freely; that they would seek to help all nations of the earth to share on equal terms in the trade of the world; that they would work for the realization of a just peace for all peoples; that this peace would guarantee freedom of the seas to all peoples; and that they favored the eventual abandonment of the use of force by all nations of the world.

The Atlantic Charter was eventually signed by the United Nations,



Acme Photo

One of the reasons we are fighting is to give all nations and races a chance to live on an equal basis with all the other nations and races. This Chinese soldier earned his wings in an American Army gunnery school

each of which pledged itself to defeat of Germany, Italy, and Japan.

The new world—the world of the common man—which will come out of this war is yet to be built. And just as surely as American youth must dedicate itself to winning the victory now, it must further dedicate itself to building the new world which is still to come after victory. Should we fail to achieve a peace in which the common people are trained to work, "to build industries with their own hands in a practical fashion," then we will have fought and won in vain.

Postwar America

Many Americans have already begun to speculate about the post-war world. What will it be like? they ask themselves. Some of them paint bright pictures of peace and plenty. Others are gloomy about the future and forecast a terrible depression following on the heels of the present wartime boom. But all of them emphasize one thing: Come what may, America will never go back to the kind of occupational world we knew before the war. The tremendous shift in the kind of jobs brought about by the war has completely changed that world.

To begin with, the war has drawn and is drawing millions of new workers into the labor market. Thus, while pre-war security meant finding jobs for some fifty million workers—postwar security may mean finding jobs for as many as sixty-five or seventy million workers! The brightest hope of the worker of the future is to train for and land a job in one of the new industries which promise to boom after the war.

Postwar Rising Fields

What are those rising industries and job fields which will offer the best opportunities to trained youth when the guns have ceased to roar? Many of them cannot now be predicted adequately, but some of them probably are:

Architecture. The building boom to come should bring new and bigger opportunities for architects, who will be needed to draw plans for the millions of new homes, offices, and factories that will need to be built after the war.

Automobile manufacturing and maintenance. Because the manufacture of automobiles has stopped for the duration, those cars now on the street will need replacement and repair badly when the war is over.

Aviation. Experts are not quite agreed about employment in aviation when the war is over. Most of them feel, however, that there should be large civilian demand for planes and that the transport of freight in huge airships should keep the aviation industry humming. It probably will not be anywhere near as large, at least for several years, as it now is during the war.

The building trades. Carpenters, plumbers, stonemasons, and other

builders should have plenty to do. The war has almost stopped home building and repair, but these activities should boom after the war.

Clerical work. This is a field which has been rising steadily for many years and gives no indication of slackening. As business grows more complex and paper work increases, there must be a further increase in the demand for clerical workers.

Engineering. While engineers have been in heavy demand during the war, they should be able to hold their own afterwards. Our country will have many building and scientific problems to solve in which the help of trained engineers will be invaluable.

Manufacture of consumer goods. Most of these goods have ceased manufacture for the duration. Once the war is over, however, there will be heavy buying of refrigerators, washing machines, radios, metal furniture, and other consumer goods which will mean heavy employment in the manufacture of those goods for at least several years.

Plastics. This field of synthetic manufacturing is getting a real "shot in the arm" today. The shortage of such materials as iron, steel, and even wood, has given plastics manufacturers their opportunity to develop and test new plastic substitutes. After the war, the public will want even more of these wonderful new products.

Radio. Television, FM, and various other new developments are no longer just around the corner. Through war, many of these radio marvels are being perfected. When peace returns, Americans will flock to purchase the new magic radios just as they rushed to buy the first crude crystal and battery sets twenty years ago when radio was first invented.

Social service. Wars bring broken homes, orphan children, and other social problems which social service workers will be called upon to handle. Postwar readjustment in the social sphere will call for the efforts of thousands of new social service workers. Notice the picture on the next page.

Synthetic rubber. The loss of our main source of natural rubber because of the war has boomed the manufacturing of synthetic or imitation rubber. During the war rubber synthetics are being perfected. After the war, our use of natural rubber will be much smaller than before, because synthetics are often just as good, and sometimes even better.

Synthetic textiles. Here, too, war shortages have served to boom the making of substitutes. The postwar world should see a continu-



American Red Cross Photo

Public health nursing is only one service which social workers perform in rebuilding broken lives and relieving poverty and misery. This field will be particularly fertile after the war for people with humanistic interests

ance of the manufacture of such cloth substitutes as nylon, rayon, and other synthetic textiles.

This survey of possible booming employment fields in the post-war world is the brighter side of the picture. There are many authorities who look toward the future with gloom, who fear that the adjustment of the nation to a peacetime footing cannot be accomplished without careful planning in advance. They maintain that because the end of the war will bring us face-to-face with the problem of finding new jobs for most of our twenty million war workers and perhaps nine-tenths of our ten million fighting men, the problem of postwar adjustment must be attacked aggressively *now*. And the far-thinking leaders of America (including the President, Wendell Willkie,

and ex-President Herbert Hoover) are all agreed that the job problems of peace should be studied in advance if we are to avoid hardship and unemployment in the future.

There are agencies at work today on postwar plans which will have far-reaching effect on your life and the life of your generation. One of these agencies is the National Resources Planning Board. The members of this board are working out a program to achieve these major goals:

1. Full employment
2. Security
3. Building America

Point one above—*full employment*—is the key to the whole program. If we can keep our workers on the job at decent wages, if we can maintain a high standard of living for our people, we need have no fear of postwar depression. We will have *security*. It is interesting to note that the leaders of England are at this moment considering a similar plan for national security which was developed by a great British leader, Lord Beveridge.

When our planners speak of *building America*, they refer to the fact that much of our country will need rebuilding after the war is over. There are slum areas throughout the United States that should be torn down and replaced with modern buildings. Anything which decays or deteriorates in our country during the war period gives us an opportunity later to rebuild something better in its place. Some experts estimate that when peace comes there will be *twenty billion* dollars worth of building to be done in the United States alone, to say nothing of similar work in war-ravaged foreign lands!

In the work for full employment and security after the war, our government will certainly play a major role. Public action will lie behind the rebuilding of America. In rural and urban areas, Uncle Sam's funds will finance civic and social improvements. The public works program will be expanded. The health of our people will be cared for as never before. We will string a bigger and better network of highways, airways, and waterways across the country. We will plan for more and better recreation facilities for our people. Government money will be lent to the states for furthering education, especially in backward areas. In short, we will make of the postwar period a time of security for every American.

Are these goals beyond our reach? Are we aiming too high? No! say the experts. There is nothing we cannot do if our people are co-operative, if they understand the problems they must face, if they are trained to cope with those problems, if they will work as hard as they have fought the war, to make them come true.

You Are the People

You and the girl across the aisle and the boy behind you and the students in the next room—all of you are the people. Will we build a better America after the war? The answer lies with you. Will you have job security and a good income when peace comes? You and your friends and neighbors—you and 134,000,000 other Americans—will answer that question with your postwar actions.

Your course is sure.

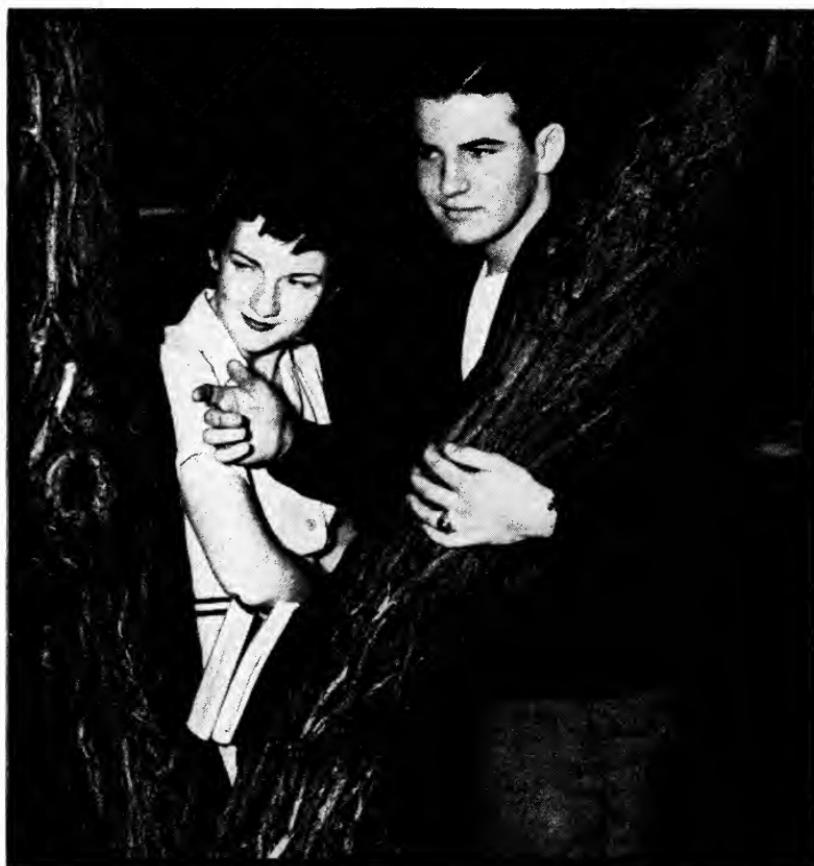
You need to train, to learn valuable working skills so that you will be able to take your place on the production lines and share the burden of rebuilding the nation.

You will have to relearn the principles of democracy until they become part and parcel of your whole outlook on life. "There can be no privileged people," said Vice President Wallace in speaking about the new day ahead of us. Do you understand the full meaning of that sentence? At home and abroad the underprivileged of the world are looking to us for leadership, because the United States represents democracy. As an American, it is and will be your responsibility to represent democracy in action every time you do a deed or think a thought.

A Watchword for the Future

The duties of citizenship in a democracy are not easily shouldered. Will you vote on every election day? Will you study carefully the candidates who ask your support and make certain that the one who gets your vote deserves it? Will you go out of your way to combat the enemies of democracy both abroad and within your community? Will you practice the ideal of tolerance? These are some of the questions you must answer affirmatively if America is to thrive after the war is fought and won.

This war we are fighting now is not a new thing. In 1776, in 1812, in 1917, earlier generations of Americans fought the very same battles we are fighting now. Because they won those battles,

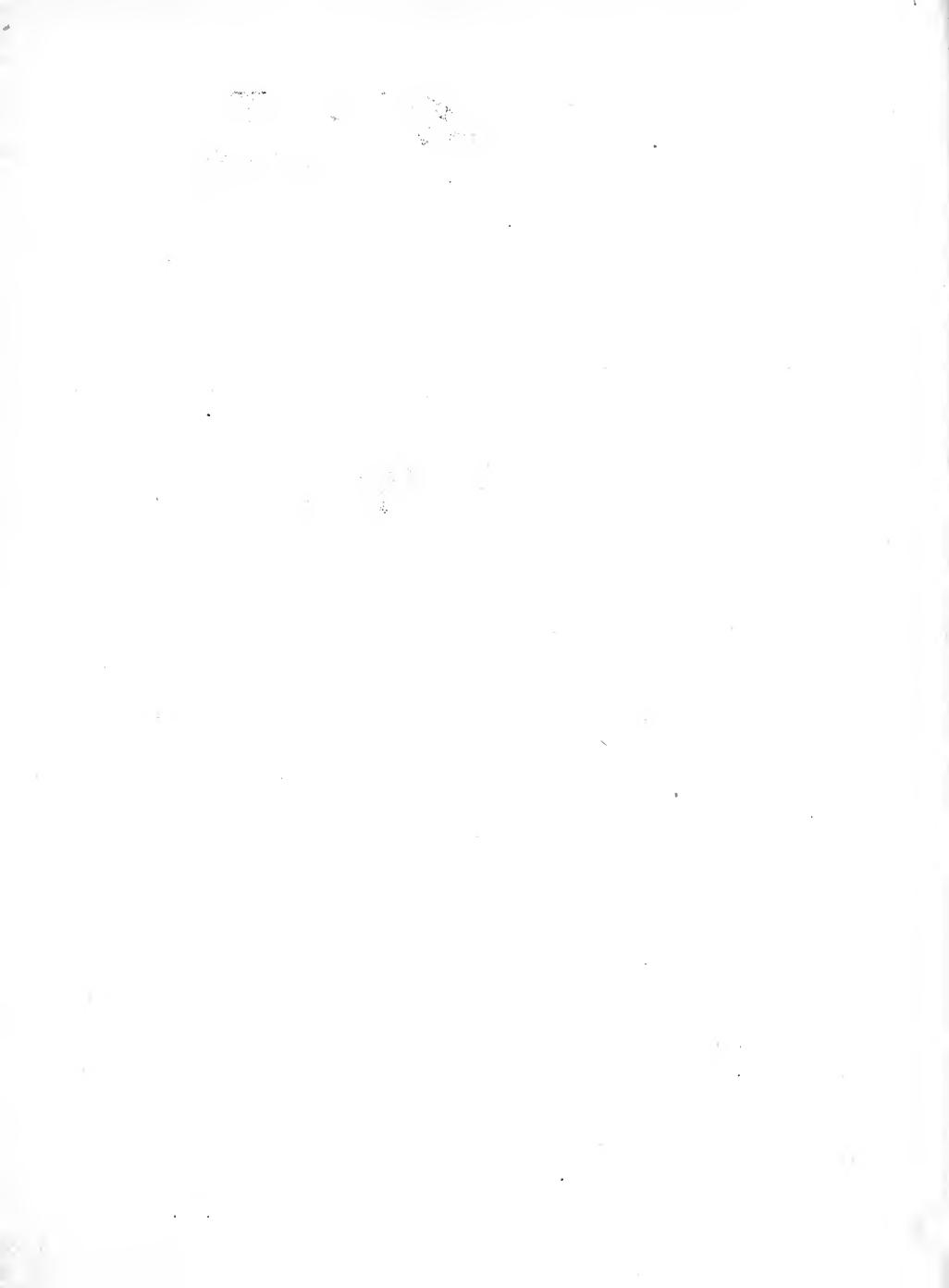


Upon the youth of today depends the kind of a world we will live in tomorrow. You will be in the driver's seat. What will you do with this responsibility?

you today have something for which to fight. The end of this war will not mark the end of the fight of the democratic peoples for a free way of life.

"Strong in the strength of the Lord, we who fight in the people's cause will never stop until that cause is won."

Every American will cherish this pledge of Henry Wallace as his watchword now and for the future.



383 WAR-SERVICE JOBS

**OTHER BOOKS YOU
WILL LIKE TO READ**

INDEX

383 WAR-SERVICE JOBS

THE FOLLOWING LISTS OF JOBS have been chosen especially to give young people an idea of the vast range of opportunities which await them for vocational service in wartime America. The lists are divided into several categories—and include jobs in the various branches of Army and Navy as well as war-important and non-essential civilian jobs. While beginning occupations are heavily emphasized, students should note the large number of jobs in which specialized training (such as they can obtain in high school) is essential.

Jobs in the Army

Accountant. Devises or executes previously devised accounting systems covering military transactions, including the control of funds, audits, and general record systems; analyzes and verifies military finance records to make certain that there is no error or fraud in the entry.

Aerial photographer. Uses aerial photographs in the construction of military topographical maps and in controlled and uncontrolled mosaics.

Armorist. Repairs, cleans, oils, and services small arms. Must have a thorough knowledge of the construction, operation, and nomenclature of all small arms.

Auditor. Examines the accounts of an organization to determine that all transactions have been properly entered in accordance with Army procedures and to discover any errors.

Baker. Bakes bread, rolls, cakes, pies, and pastries.

Bookkeeper. Keeps a complete and systematic set of records of all financial transactions of an organization.

Carpenter, construction. Performs a variety of carpenter's tasks in connection with the construction and maintenance of such wooden structures as barracks and sheds, as well as makes furniture and other wooden equipment.

Cashier. Disburses funds according to Army regulations and under supervision of disbursing officers. May be responsible for the receipt as well as the disbursement of money in a military organization or unit.

Chauffeur. Drives an Army passenger automobile to transport military personnel or civilians for whom official transportation is authorized.

Clerk. Performs general office work in connection with the operation of an Army administrative office. Must be able to type with reasonable speed.

Cook. Prepares food for the personnel of an Army organization, using a daily menu as a guide.

Dental technician. Performs dental laboratory work and further assists the dental officer in all chair duties, including X-ray, by preparing patients for dental work.

Draftsman. Prepares clear, complete, and accurate working plans and detailed drawings from sketches or engineer's notes for use in connection with specifications for all sorts of miscellaneous Army projects.

Electrician. Installs, tests, and repairs electrical fixtures, apparatus, control equipment, and wiring for alarm, communication, or light or power systems of a building or other construction projects in an Army post, camp, or station.

File clerk. Files correspondence, cards, invoices, receipts, and other records, arranging them according to subject matter or code systems in file cabinets, wall files, or in special filing cases.

Gunner. Operates the controls of an antiaircraft, antitank, or other type of gun or howitzer to aim and fire the piece. Must be a capable leader who is able to instruct others and assume the duties of the chief of section in emergencies.

Highway worker. Repairs or patches roads or highways. Operates common types of road machinery, such as scrapers, snow plows, and trucks, and uses such hand tools as are required in ditching and clearing rights-of-way.

Horseshoer. Shoes Army horses and mules.

Laboratory worker. A general term for any worker in laboratory performing routine tests and special tests, cleaning equipment, and doing research work.

Lineman, field. Erects power lines for military and associated installations consisting of poles, cables, transformers, and auxiliary equipment.

Machinist. Operates and maintains all types of machine tools for the manufacturing of armaments, ammunition, and other Army ma-

terial, using lathes, milling machines, planers, shapers, and bench tools; works from blueprints and written specifications.

Mechanic, master. Supervises the maintenance of all mechanical installations in an Army repair shop, machine shop, or other similar activity; directs the work of others engaged in the maintenance of plant structure.

Mechanic, automotive chassis. Determines cause of malfunctioning, makes major repairs on, and tests operation of the power train units, body, and hull suspension system of either half-track vehicles or track-laying vehicles.

Mechanic, automotive engine. Determines cause of malfunctioning, makes major repairs on, and tests operation of automotive engines.

Mechanic, radio. Makes first and second echelon repairs to very high-frequency radio equipment and may make such repairs to fixed and mobile ground direction-finding equipment and operates such equipment.

Mess sergeant. Directs kitchen and mess hall personnel by supervising and instructing them in the preparation of serving of food to the members of an organization. Prepares daily menu; maintains a record indicating the standing of the mess account at all times.

Munitions worker, ground. Performs various tasks in connection with the handling of all types of ammunition, except ammunition and bombs used by the personnel of the Army Air Forces. Must be physically strong, sure-footed, and well co-ordinated.

Musician. A general term used to designate one who follows music as a profession.

Pigeon trainer (pigeoneer). Breeds, trains, and cares for a loft of homing pigeons which are to be used as message carriers.

Plumber's helper. Assists plumber to assemble and install air, gas, water, and sewer pipeline systems, fittings, and fixtures.

Radio operator. Sends and receives radio message by voice or international Morse code. Holds a commercial radio operator's license issued by the Federal Communications Commission or has completed a basic course in training in radio operation in an approved school or training center.

Radio maintenance man. Inspects, installs, tests, and repairs radio transmitting and receiving instruments and related equipment in connection with the maintenance of Army communications.

Repairman, instrument. Maintains and makes major repairs on many types of scientific instruments. Completely disassembles and cleans instruments; repairs broken or defective mechanical or optical parts; fabricates replacement parts.

Saddler (saddle and harness maker). Makes and repairs such Army leather equipment as saddles, bridles, and harnesses.

Searchlight operator. Sets up and operates a mobile harbor defense or antiaircraft searchlight.

Sign painter. Designs, lays out, and paints such signs on cloth, metal, wood, glass, paper, and other stocks as may be required in connection with the operation of an Army post, camp, or station, or in the field.

Switchboard operator (common battery). Operates one position of a common battery switchboard.

Switchboard operator, field (local battery). Installs, operates, and performs minor maintenance on a portable magnetotype switchboard. Must have good memory and be capable of sustained effort under pressure.

Telephone operator. Operates a telephone switchboard to relay incoming and outgoing messages to or from branch telephones located in an Army camp, post, or station headquarters.

Telephone maintenance man (equipment repairman). Performs repairs and maintenance on telephone equipment. Uses standard hand tools in making necessary repairs.

Teletype maintenance man (teletypewriter mechanic). Installs, inspects, tests, services, and repairs teletypewriters in connection with the maintenance of Army communication services.

Tinsmith. A sheet metal worker who makes and repairs household or kitchen equipment of copper, tin, or zinc sheet metal.

Truck driver (heavy). Operates Army heavy trucks (greater than three-ton capacity) used to haul military supplies, equipment, or personnel; makes necessary minor road repairs; keeps truck greased and supplied with gasoline and oil.

Truck driver (light). Drives Army motor trucks with a capacity not in excess of three tons; makes minor adjustments and repairs.

Tractor driver. Operates an Army gasoline or Diesel-powered wheel or caterpillar tractor to drag or tow material or equipment; makes minor adjustments and emergency repairs to engines and auxiliary tractor apparatus.

Typist. Typewrites letters, copies data, cuts stencils for mimeograph, fills in forms, copies matter from rough draft or corrected copy; operates any standard typewriter with reasonable accuracy at a minimum speed of forty words per minute; indexes and files.

Veterinary technician. Cares for and assists in the treatment of sick or wounded animals. Prepares veterinary and clinical records, and sick and wounded reports.

Warehouseman. Hand trucks or carries merchandise and material about a warehouse, usually between loading platform and storage bins.

Welder (combination). Fabricates metal articles containing joints or seams or parts made from different kinds of metal by means of electric-welding or acetylene-welding apparatus, and repairs broken metal objects and military equipment.

X-ray technician. Assists radiodontist or roentgenologist in X-ray treatment; develops films photographically; makes a diagnosis and detailed report from picture.

Jobs in the Army Air Forces: Ground Jobs

Aircraft armorer. Inspects, adjusts, and repairs armament equipment: aerial machine guns, cannons, synchronizers, gun sights, gun cameras, bomb racks, and other armament mechanisms.

Aircraft machinist. Is responsible for general machine work and heat treating, involving the repair of air base equipment including tools and remaking certain broken and worn parts and adjustments by grinding and finishing metal surfaces to close tolerances.

Aircraft metal worker. Cuts and forms sheet metal used in the assembly and repair of aircraft parts, fittings, and structural parts, using hand tools and metal-working machines.

Aircraft welder. Fuses metal parts by means of electric welding apparatus or an oxyacetylene torch to fabricate or repair broken or cracked metal airplane parts.

Aircraft mechanic. Checks the condition of airplanes and engines; makes repairs, replacements, and adjustments; inspects critical parts of the craft.

Air forces administrative clerk. Makes up and files reports; tabulates and posts data in record books and on bulletin boards; types; operates office machines, such as duplicating machine.

Air forces supply and technical clerk. Receives, stores, and issues

equipment, material, merchandise, or tools; takes periodic inventory, making up necessary reports; types; operates office machines such as bookkeeping and duplicating machines.

Link trainer instructor. Teaches instrument flying (blind flying) to pilot students through use of a link trainer, a device resembling a plane, complete with instrument panel, in which student is confronted with the problem of blind flying.

Parachute rigger. Repacks parachutes; sews and patches, by hand and machine, damaged parachute canopies.

Photographer. Makes photographs from planes in flight; assembles mosaic maps; enlarges, reduces, and intensifies picture prints.

Radio operator and mechanic. Operates and adjusts all transmitter and receiver equipment; repairs defective radios; tests circuits, tubes; repairs and replaces defective parts.

Weather observer. Analyzes weather conditions; observes instruments recording wind velocities, changes in temperature, humidity, barometric pressure, amount of rainfall, and other conditions; prepares weather maps and reports.

Flying Jobs for Enlisted Men

Glider pilot. Pilots gliders on two major types of military missions: 1) transporting men and material from one point to another, and 2) landing troops in surprise attacks on enemy positions.

Staff sergeant pilot. Bomber and reconnaissance pilot's chief function is to fly so as to permit the most expeditious performance of the plane crew's tactical mission; *fighter pilot* flies single and twin-engine planes, fires planes' guns; navigates; communicates by radio with the ground and other aircraft in flight in performing the major functions of destroying enemy bombardment planes, and escorting bombing missions.

Aerial engineer. Flies with multi-engine bomber and transport planes; makes repairs and adjustments during flight; substitutes for or helps co-pilot in operation of flaps, raising and lowering landing gear, and other mechanical operations; serves as aerial gunner during attack.

Radio operator. Serves as the connecting link between the plane and ground stations; relays by radio necessary data to the operating personnel on the ground; receives weather and other information for the plane crew; operates radio sets aboard the plane and handles

the direction finders, radio compass and other radio-active instruments; serves as gunner during attack.

Aerial gunner. Mans the guns in bombing planes; informs pilot of approaching enemy planes; as aerial sharpshooter, protects bombers from attacks by enemy fighter planes and destroys enemy planes with a minimum amount of ammunition.

Army Air Forces Jobs: Aviation Cadets

Bombardier. Directs flight of the bomber when approaching and at the scene of action; is charged with vital duty of aiming, with the highly secret American bombsight, and releasing bombs upon the enemy objectives; as well, serves as aerial gunner during attack by enemy.

Navigator. Plots course of the plane to and from the objective, giving flight directions to the pilot; keeps a flight log book; serves as gunner during attack.

Pilot. Same duties as staff sergeant pilot except that pilot officer is usually in command of plane.

Armament officer. Supervises maintenance of armament equipment on tactical planes assigned to his unit commanding officer; has planes at all times ready to perform tactical missions under full military load.

Communication officer. Supervises maintenance and operation of radio, telegraph, teletype, and directional equipment, including radio compasses, which are assigned to his unit; is in command of the personnel who check and repair all communications equipment on the planes in the unit.

Engineering officer. Is responsible for all mechanical details of the planes on the ground; is an engineering foreman; commands crew chiefs, aerial engineers, inspectors, and mechanics.

Meteorology officer. Analyzes weather conditions; forecasts conditions along flight routes; keeps the navigator informed at all times; meteorology officer is in command of weather observers in his unit.

Photography officer. Takes charge of the operations of mobile and fixed photographic laboratories and equipment assigned to his unit; commands the aerial photographers and repairmen; and is responsible for the accurate photographic mapping of various strategic areas.

Jobs in the Navy: Seaman Branch

Boatswain's mate. Does all kinds of canvas work, and hoisting with block and tackle. Handles rope, wire, and anchor chain. Handles power boats and sailboats. Charts a course by compass. Directs salvage operations.

Turret captain. Takes charge of a gun turret and its crew. Assembles and repairs all types of naval guns. Handles ammunition. Operates periscopes and range finders. Understands electric fire control and firing mechanisms.

Torpedoman's mate. Lubricates, assembles, charges and fires torpedoes. Predicts accurately their performance at various distances and under different conditions. Takes part in mine laying and dropping of depth charges.

Gunner's mate. Takes complete charge of a gun and a gun's crew. Assembles and fires all types of guns. Handles ammunition. Handles mines and depth charges.

Quartermaster. Steers the ship. Takes soundings. Uses range finder. Plots bearings. Operates signal control apparatus and searchlights. Corrects sailing charts. Determines ship's position by sun and stars. Navigates by dead reckoning, radio bearings, and soundings. Sends and receives international code by blinker, searchlight, and semaphore.

Signalman. Stands signal watch on bridge. Sends and receives international code by blinker, searchlight, and semaphore. Takes and receives flag signals. Operates searchlights and signal apparatus in darkness.

Fire controlman. Stows, inspects, and repairs ship's fire control instruments. Uses and adjusts optical instruments. Takes charge of fire control equipment. Operates gun range finder and direction pointer. Diagrams electric connections and circuits. Knows all details of aiming and firing guns. Mans fire control stations.

Seaman. Knows naval drill duties and regulations. Knows how to tie knots, steer ships, send and receive semaphore. Stands watch. Boxes the compass. Knows gunnery duties and code flag signals.

Jobs in the Navy: Special Branch

Yeoman. Takes charge of ship's office. Takes dictation and writes Navy letters. Prepares reports. Operates duplicating machines. Uses

Navy filing system. Keeps personnel records. Types, routes, and files correspondence.

Storekeeper. Takes charge of ship's storeroom. Issues stock, stores, records, reports, requisitions, and invoices stocks afloat and ashore. Issues and accounts for clothing and minor purchases.

Pharmacist's mate. Takes charge of sick bay on board ship. Does minor surgery and first aid work. Prepares and administers simple medicines. Gives anaesthetics. Accounts for hospital and medical supplies.

Hospital apprentice. Is familiar with anatomy and physiology. Knows minor surgery, first aid, nursing. Prepares and administers simple medicines.

Bandmaster. Applies thorough knowledge or rudiments of theory and harmony. Conducts a band or orchestra. Performs on an instrument.

Musician. Directs band in absence of leader. Plays standard band music. Reads music at sight. Helps band members to learn music. Knows fundamentals and theory of music.

Buglemaster. Is familiar with all bugle and drum calls and honors rendered. Is a drum major and leads and instructs a corps. Leads a regimental band.

Bugler. Sounds all bugle and drum calls. Knows table of honors. Plays in a bugle and drum corps.

Specialists. Selected men for special assignment as athletic instructors, gunnery instructors, IBM operators, mail clerks, ordnance inspectors, photographers, recruiters, entertainers, teachers, transport airmen, welfare workers with chaplains.

Jobs in the Navy: Commissary Branch

Chief commissary steward. Supervises ship's galley. Takes complete charge of foodstuffs. Plans menus. Keeps accurate records. Directs cooking and preparation of foods. Buys food economically. Directs storing of provisions.

Ship's cook. Supervises and prepares food for cooking. Operates all cooking apparatus. Inspects provisions. Plans menus. Is responsible for food storage. Estimates provisions. Takes charge of galley.

Baker. Operates ovens. Does all kinds of baking. Operates all baking apparatus. Is able to take charge of a bakery on board naval ships.

Jobs in the Navy: Messman Branch

Officers' steward. Keeps books and accurate records of food used and purchased. Arranges menus. Takes charge of mess arrangements. Keeps in touch with current food price ranges.

Officers' cook. Takes charge of a galley and cooks. Is able to account for all supplies. Knows food price ranges. Estimates quantities of food required.

Mess attendant. Keeps rooms assigned clean. Has knowledge of ship's laundry. Serves at table in officers' mess. Takes charge in absence of steward.

Jobs in the Navy: Artificer Branch

Electrician's mate. Uses electrical tools. Performs soldering, brazing, electrical wiring. Operates and repairs searchlights and electrical motors. Diagrams and repairs telephone circuits. Applies first aid in case of electric shock.

Radioman. Operates Navy radio transmitting and receiving equipment. Maintains and cares for radio batteries. Sends and receives on all frequencies used by the Navy. Enciphers and deciphers Navy code messages. Repairs radio direction finders and sound equipment.

Radio technician. Maintains radio equipment.

Radarman. Operates special radio equipment.

Soundman. Operates special sound equipment.

Telegrapher. Acts as cable station telegrapher. (Rating authorized only in time of war.)

Carpenter's mate. Uses hand and power tools to repair or replace all woodwork on board ship. Takes charge of ship ventilation, painting, water-tight control, drainage, laying of linoleum.

Patternmaker. Uses pattern and molding tools. Executes intricate patterns. Estimates time, materials, and cost in patternmaking and casting.

Shipfitters. Uses hand and machine tools of shipfitter's shop to lay out and make steel metal work. Does forging, welding, soldering. Operates fire extinguishers and rescue breathing apparatus. Knows location of all bottoms, tanks, ports, hatches, and watertight doors.

Printer. Takes charge of ship's print shop. Sets type. Operates linotype machine, printing press, and duplicating equipment. Reads proof. Makes up books and pamphlets. Knows inks, paper, colors, and mechanism of all types of printing equipment.

Painter. Knows about rescue breathing apparatus. Is responsible for fire extinguishers. Prepares and applies paints and varnishes. Lays and repairs tiling and linoleum.

Jobs in the Navy: Artificer Branch (Engine Room Force)

Machinist's mate. Operates main engines and auxiliary engines on board ship. Adjusts, repairs, and overhauls engines and other engine room equipment.

Motor machinist's mate. Operates machine tools. Operates and maintains internal combustion engines. Overhauls engine auxiliaries. Plans and supervises engineering repairs.

Water tender. Takes charge of firerooms when under way. Is responsible for efficient boiler operation. Handles boilers, condensers, evaporators, feed water pumps, blowers.

Boilermaker. Fits pipes and makes repairs in boilers. Knows fireroom safety precautions. Tests boilers.

Metalsmith. Makes plans and time and cost estimates. Works in copper and brass. Draws out, tempers, neals, and case hardens metals.

Molder. Equips and keeps in condition a shipboard foundry. Makes castings. Uses molding tools. Cares for and operates oil furnaces and crucibles.

Fireman. Fires and tends boilers. Operates, adjusts, and repairs pumps. Directs safety precautions in emergencies. Obtains engineering data and enters it in log.

Jobs in the Navy: Aviation Branch

Aviation pilot. Pilots planes or other airships. Serves as plane captain.

Aviation machinist's mate. Assembles, services, and repairs airplanes and airplane engines. Splices aircraft wiring. Manufactures terminals and other small parts. Knows principles and theory of flying. Does seamanship work necessary to airplane ground work.

Aviation metalsmith. Makes temporary and permanent repairs to airplane metalwork, such as radiators, pipe connections, instruments, and joints. Forges, brazes, welds, electroplates, bends pipe.

Aviation radioman. Operates radio transmitting and receiving equipment of naval aircraft. Maintains and cares for radio batteries. Sends and receives on all frequencies used by the Navy. Enciphers and deciphers Navy code messages.

Aerographer's mate. Directs installation of complete naval meteorological observatory afloat or ashore. Makes upper air soundings with surface and aircraft instruments. Computes pilot balloon soundings. Makes weather observations. Draws weather charts. Reads weather codes and instruments.

Photographer's mate. Organizes and directs operations of a naval photographic unit. Installs serial mapping cameras in planes. Makes and assembles serial mapping photographs. Operates motion picture machines and projection lanterns. Makes and shows slide films. Develops negatives and makes prints.

Aviation ordnanceman. Handles and takes care of explosives. Uses .30 calibre rifle, .45 calibre automatic, and other weapons used in aviation. Has thorough working knowledge of bombs, bomb fuses, bomb sights, gas masks, torpedoes, and releasing gear.

Parachute rigger. Packs and repairs parachutes. Cares for and handles fabrics. Operates a sewing machine.

Jobs in the WAACs and WAVES

Jobs which women perform in the WAACs and the WAVES duplicate jobs ordinarily performed by men in the Army and Navy. The following are typical of the occupations open in these military auxiliaries. For job definitions, refer back to the Army and Navy job lists.

Accountant	Mechanic, aviation
Aerographer's mate	Metalsmith, aviation
Baker	Meteorologist
Bookkeeper	Parachute rigger
Clerk	Pharmacist
Cook	Photographer
Laundry worker	Radioman
Librarian	Statistician
Link trainer operator	Telegraph operator
Mathematician	Telephone operator

War Industry Civilian Jobs for Which Ordinary Pre-Employment Training Is Sufficient

Absorberman. Tends absorbers in which gases are absorbed in liquids; regulates by valves the flow of liquids and gases to and from absorbers.

Acetylene-burner operator. Sets up and operates oxyacetylene-burning (cutting) equipment to perform metal-cutting operations. May interpret blueprints or sketches and lay out (mark) cutting lines on the metal, using scales, dividers, and other instruments.

Acid man. Prepares and mixes the acid solution used in nitrating cotton linters; takes samples of acids, before and after mixing, for laboratory tests. May prepare similar acid solutions to be used in manufacturing nitroglycerine.

Airplane coverer. Sews airplane fabric to airplane structure; applies a single coat of dope (tautening lacquer) to the covering, and applies strips of pinked-edge fabric tape over the rows of stitches to protect and cover them.

Airplane inspector. Inspects aircraft fittings and assemblies for conformation with specifications; passes, rejects, or returns for reworking the material inspected.

Ammunition-proof technician. Makes routine tests on small arms ammunition samples for such qualities as bullet velocity, accuracy, and armor-piercing qualities; records test results, making necessary calculations using formulas; makes routine repairs to arms and testing equipment.

Angle puncher and shearer. Punches holes through long or short angle bars, and shears them to desired lengths, sets material in holder of machine, and pulls lever to punch holes and cut material.

Annealer. Tends an annealing furnace in which metal parts are subjected to heat treatment to relieve internal strains, and to soften and strengthen the metal; may heat metal parts to predetermined temperature and quench them in oil or water to harden them.

Annealing-bath operator. Relieves the strains set up in artillery cartridge cases during the drawing operations by immersing the strained portion of the cases in hot chemical solution.

Arbor-press operator. Operates a power-driven or hand-operated press to force together tightly fitting parts, such as arbors, onto shafts or into housings that support them.

Armature bander. Winds steel wire around armature core or around ends of coils where they protrude from core to hold coils in position against centrifugal force when armature rotates; may wind armatures, wind coils, shape coils, and perform other duties in repairing electric motors.

Armature winder. Winds coils of wire into slots of armature core:

taps coils firmly into slots and drives in wedges to hold them in place against centrifugal force.

Armature winder, repair. Winds new coils on armatures of used generators and motors; may test armatures; solder ends of coils to commutator segments; wind field coils; test motors for defects; and perform other duties pertaining to motor repairing.

Armoring-machine operator. Winds a protective covering around insulated wires, such as submarine cables and underground cables.

Assembler, firearms. Assembles and disassembles rifles, pistols, automatic weapons, accessories, and parts, making necessary changes, such as filing, drilling, and riveting; detects and remedies any faults found on firearms, using machines and tools common to machine shops.

Autoclave operator. Charges, operates, and unloads an autoclave (high pressure vessel) that is used in manufacture of chemicals.

Babbitter. Tins and babbitts connecting rods and connecting rod bearing caps in a centrifugal spinning machine.

Balancer. Weighs platons and connecting rods on delicate scales; groups parts according to weight range; discards parts above or below limits. May use metric system, determining weights in grams and kilograms.

Barrel centerer. Drills and countersinks a hole in each end of a rifle barrel before it is drilled.

Barrel heater. A forge heater who heats billets, to be used in rolling out into gun barrels, in forging furnace.

Barrel threader. Makes threads on gun barrels for fastening to stocks; inspects the threading to determine quality, using gages to check on accuracy.

Bench grinder. Cleans and rough-finishes the surfaces of metal objects by holding them against the rotating abrasive wheel of a grinding lathe.

Boring-machine operator, automatic. Operates one or more automatic or semiautomatic machines that bore finished holes in metal parts; may set up and adjust cutting tools to perform specified operation.

Boring-machine operator, horizontal. Sets up and operates a horizontal single-spindled boring machine to bore holes of specified diameter and depth in wooden parts.

Bucker-up. A term applied to an aircraft riveter. He may remove

defective rivets by drilling out the shank with a portable electric drill.

Burnisher, hand. Polishes those parts of metal objects that cannot be polished on a buffing or polishing wheel.

Burrer, hand. Removes burrs and rough edges from machined metal parts; may use power-driven burring brush for the inside of housings and other pieces inaccessible to hand tools.

Canopy inspector. Examines the seams of parachute panels and canopies for defective stitching; trims the ends of seams, using scissors to make them even with the rest of the part.

Canopy stringer. Strings shroud lines through the perpendicular seams of a parachute canopy for connecting the canopy to the parachute harness. The job is usually performed by two workers working together so that each advances one panel seam in the same circular direction as the stringing progresses.

Carburetor inspector. Inspects carburetor after assembly for proper float setting, by means of gauges; determines the seating of metering and main jets, and checks orifices with plug gauges for proper size.

Carburetor man (automobile). Adjusts and repairs automobile carburetors, which are less complex than airplane carburetors; also cleans and repairs carburetor air filters.

Centerless-grinder operator. Adjusts and feeds an automatic cylindrical grinding machine that grinds cylindrical objects by rolling them between the rims of two abrasive wheels.

Coil taper, machine. Insulates and reinforces armature coils by wrapping them with either cotton, asbestos, or paper tape, using a motor-powered taping machine.

Coiler. Operates a machine which coils heated bars of steel into coil springs.

Cold-press operator. Cold bends structural steel parts, such as bars, channels, beams, and angles, in a cold press.

Connecting-rod inspector. Inspects finished connecting rods under a strong light for straightness, faulty steel, milling work, and finish; marks defective rods with pencil and sets them aside for repairing or scrapping.

Crankshaft plugger. Plugs openings of a crankshaft resulting from drilling operations, to form a continuous oil passage through inside of shaft.

Cutter, hand. Cuts pieces of fabric to be sewed together, from single layers of material or from many layers of material piled up, using

hand knife or shears; follows outline marked on cloth or outlines of patterns placed by others.

Cutter, machine. Guides an electrically-powered cutting machine, which cuts through many layers of fabric, along chalk lines or around pattern pieces to cut identical parts of fabric; frequently piles material and arranges patterns so as to have the least waste, marking lines around material with chalk.

Cylindrical-grinder operator. Finishes cylindrical, tapered, or conical metal surfaces on a cylindrical-grinding machine, performing single, repetitive, precision-grinding operations.

Detail-electrical assembler. Assembles electrical junction boxes for installation on airplanes; connects wired junction box to testing apparatus and verifies wiring by connecting box to testing lights.

Dimpling-machine operator. A punch press operator who operates a pneumatic power press to depress the edges of holes previously drilled in sheet metal parts.

Driller. Drills, reams, and countersinks rivet holes in heavy plates, beams, angles, or other parts of a ship according to layout marks, using a hand or wheeled portable electric or pneumatic drill.

Dynamometer tester, motor. Tests, adjusts, and does minor repairs on complete motors before they are mounted in the chassis; uses acutely developed sense of hearing, plus ability to diagnose unusual sounds, such as piston slap, knocks, taps, and gear grinds; as well, must have experience to interpret readings on instrument panel of dynamometer.

External-grinder operator. Operates an automatic or semiautomatic machine that rough-grinds or finish-grinds the bearing surfaces on such parts as camshafts and crankshafts. Checks accuracy of work by using precision gauges measuring to 0.0003 inch.

Final inspector (guns). Inspects stocks and hand grips on guns for proper finish.

Grinder. Operates a portable electric machine into which a variety of tools can be inserted to smooth and polish automotive equipment prior to painting.

Grinder operator. Supervises the operation of one or more grinders, keeps record of material ground and weight packed.

Grooving-machine operator. Cuts oil grooves in various parts, using a machine that broaches or mills the passages.

Guide grinder. Reshapes worn guides used on rolling mills to guide

metals to and from the rolls, by holding them against a power-driven grinding wheel.

Inspector (cartridge). Examines cartridges or cartridge components, such as cases, bullets, and primers, for defects in material or workmanship.

Lathe operator, automatic. Operates one to four automatic lathes which perform in sequence a series of operations on parts, such as pistons, camshafts, and other precisely machined parts; may set up machine.

Leather worker. Makes and repairs leather gun slings, shoulder pads, straps, and other small arms material made of leather.

Mercury-cracking tester. Examines completed cartridge cases for cracks; discards defective cases.

Metal-stamping inspector. Inspects and checks finished metal stampings for irregularities, indentations, and rough edges.

Paint-spray inspector. Inspects body and parts after each painting operation for smoothness, completeness, and texture, marks defects with chalk.

Polisher. Polishes metal articles by holding the articles at various angles against a rotating emery-coated cloth wheel until all surfaces are uniformly polished.

Primer inspector. Examines cartridge primers for defects by using a magnifying glass; removes faulty primers with tweezers.

Punch-press operator, automatic. Tends one or more automatic punch presses that punch holes in light metal stock by the action of appropriate dies; machine may also cut metal strips to correct length.

Punch-press operator, hand. Punches holes in sheet metal parts with a hand operated bench punch; may measure and mark location of holes on the metal parts.

Riveting-machine operator. Operates a riveting machine to rivet together parts of various articles; may punch rivet holes in articles by replacing riveting tool with a punching tool.

Saw filer, hand. Sharpens and adjusts teeth of band, circular, and hand-working saws by hand.

Skin man. A major assembler who fits sheet metal coverings to fuselage bulkheads and other sections of aircraft, trims edges of preformed sheets, drills rivet holes through sheets and flanges of bulkheads using an electric drill, and repairs metal areas that have been damaged.

Tank tester. Tests airplane fuel tanks for leaks.

Thread grinder. Grinds threaded articles to correct the pitch of the thread.

Tool grinder. Sharpens leather-cutting, stone-cutting, wood-cutting, and metal-cutting tools that need not be ground to a very fine tolerance.

Tread cutter, hand. Prepares used rubber tires for retreading operations by cutting old tread from the tires with a sharp knife; may buff tires.

Turret-lathe operator, automatic. Tends a fully automatic turret lathe in which the actions of all tools are controlled automatically, frequently by cams, feeding blanks into the machine and disposing of machined parts.

Welder, flash. Joins metal sections (usually panels) together by means of an electric-welding machine that automatically welds the parts in a continuous weld.

Welder, spot. Joins together two or more overlapping pieces of metal by means of a spot-welding machine; may interpret blueprints and spot weld parts accordingly.

Welder, thermite. Joins metal parts together by means of thermite process; may preheat parts with gas, oil, or gasoline torch if parts are large.

War Industry Civilian Jobs for Which ESMWT Training Is Helpful

Accountant (general). Devises or executes previously devised accounting systems; prepares financial statements, audits books, and does other accounting work as business requires.

Chemical laboratory worker. A laboratory assistant who prepares the chemical solutions used in experiments and research; is responsible for equipment and for assisting chemists about the laboratory.

Draftsman. Prepares clear, complete, and accurate working plans and detail drawings, from rough or detailed sketches or notes for engineering or manufacturing purposes, according to the specified dimensions.

Electrician. Lays out, assembles, installs, and tests electrical fixtures, apparatus, control equipment, and wiring used in the alarm, radio, communication, light, and power systems of buildings or other construction projects.

Inspector, ordnance. Checks ordnance materials (such as guns,

shells, and other munitions) to see that they meet government or industrial specifications; uses gages and other measuring devices.

Inspector, tool. Tests and approves new gauges, jigs, fixtures, and precision tools before they are used by production workers, and inspects them in use to make sure they are maintaining their accuracy.

Inspector, welding. Inspects welds for defects and weakness; may employ acceptance jigs in the inspection of welded parts.

Mathematician. A term applied to a worker who has attained competence in some field of mathematics.

Mechanic, airplane. Checks condition of airplane and engine, and makes repairs, replacements, and adjustments to each; performs any repairs that can be accomplished in the repair shop.

Mechanic, automobile. Repairs passenger automobiles and light delivery trucks. When employed in public garages, he may be restricted to repair of automobile motors, transmissions, and clutches.

Optical shop worker. Makes and repairs glasses and lenses used in scientific instruments; may be a lens grinder or polisher; may work by hand or machine or both.

Personnel worker. A vocational specialist who examines workers to determine where they will be most productive in his plant; may act as representative of management to workers.

Photographer (commercial). Photographs persons, motion picture sets and personnel, merchandise, exteriors and interiors, machinery, fashions, both indoors and outdoors, to be used in advertising, selling, and for instruction purposes.

Production worker. Keeps record of number and type of units produced and makes up production schedules from sales orders. May estimate rate of production.

Radioman (repairman). Repairs defective radios; tests circuits, tubes, and other parts; isolates defects, and either fixes them or replaces defective parts with new ones; resolders loose connections.

Statistician. Plans procedure and technique for solution of statistical problems and devises formulas for reduction of data; analyzes quantitative statistical data, such as money, labor problems, marketing, and agricultural problems; may write reports and summaries presenting the findings.

X-ray technician. Assists doctor in X-ray diagnosis and therapy; prepares patient for treatment; develops X-ray pictures and makes detailed report of findings.

Other Civilian Jobs for Which Varying Degrees of Training Are Required

Agent, freight. Travels from town to town within a territory, soliciting the patronage of concerns; quotes freight rates; makes special arrangements for handling freight.

Armorer. Repairs, assembles, and tests firearms and related items; inspects firearms for action and accuracy; conducts tests of firearms.

Assembler, bench. Assembles and fastens together metal parts to form such articles as filing clips, card frames, clothing racks, and shoe stands, with screws or by hand riveting.

Assembler, shipbuilding. Assembles and erects various parts of a ship in the assembly shop or yard; supervises the hoisting of parts or equipment in place on a ship.

Balloon rigger. Assembles and services all types of free and captive balloons and makes inspections and repairs to keep them in good operating condition; assists in the inflation of balloons.

Blacksmith. Forges metal articles and parts for the building, repairing, or manufacturing of equipment. May shoe horses.

Boatbuilder (steel). Constructs, fits up, and repairs all kinds of small steel boats, pontoons, and floats.

Boatbuilder (wood). Constructs and repairs small wooden boats, floats, pontoons, and motorboats.

Boilermaker. Performs any or all machine and hand operations necessary to fabricate and assemble boilers, tanks, vats, and other vessels made of heavy steel plates.

Bookkeeper. Keeps necessary records of the business transactions of a firm; may handle payrolls, prepare monthly statements and bank deposits.

Brakeman, train. Helps load and unload passengers; switches cars, lights, and otherwise services train.

Bricklayer. Lays bricks, terra cotta, hollow tile, and similar building blocks used in construction work.

Carpenter. Performs general carpentry work; builds frames, lays floors, and performs other functions involved in the fastening together of wood.

Clerk, shipping. Directs and participates in the assembling and shipping of merchandise or material to customers.

Coremaker. Makes sand cores used in molds to form hollows or holes in metal castings.

Farm hand. A laborer on a farm.

Farmer. Engages in the profitable exploitation of the soil to raise crops and animals, process them in salable form, and market them.

Fireman. A member of the fire-fighting force of a city or town.

Guard. Guards an industrial plant, warehouse, or other property against fire, theft, and illegal entry.

Hospital attendant. Performs various heavy duties in a hospital under the direction of a nurse.

Instrument repairman. Repairs and adjusts recording, regulating, and control instruments; may adjust and repair mechanism and valves of automatic control devices.

Interviewer. Interviews applicants for employment; answers questions; files applications; arranges interview for applicant with employing official.

Joiner, ship and boatbuilding. Constructs cabinets, closets, shelves, deck houses, and all the interior woodwork necessary for the completion of a ship or boat, working from blueprint specifications; does not perform carpentry of a heavy or rough character.

Librarian. Supervises the classification, cataloguing, shelving, and circulation of books and periodicals; also furnishes information.

Lineman. Erects power line, consisting of poles, cable, and auxiliary equipment, to conduct electricity from the power plant to the place of use.

Lumberman. A general term used to designate a person who is engaged in logging operations as an operator or owner.

Machinist. Carries through to completion the construction and repair of all kinds of metal parts, tools, and machines; uses skillfully all machinist's hand tools, including scrapers, chisels, files, and measuring instruments; operates all machine tools including lathes.

Mail clerk. Prepares incoming mail for distribution and outgoing mail for mailing; may perform a variety of related duties such as distributing and collecting mail.

Milling machine operator. Performs shaping, planing, and grooving machine work on metal objects, using a machine that cuts the metal with many-toothed, rotary cutters.

Miner. Performs a complete set of duties involved in driving underground openings to extract coal, slate, rock, and other minerals by hand or machine.

Motorman. Operates an electric-powered street railway surface car, elevated, or subway car.

Nurse, practical. One who has a knowledge of nursing secured primarily through practical experience; attends bedridden, convalescent, infirm, or mental patients.

Nurse, registered. Performs various nursing duties requiring prescribed education, experience, and skill in the art of caring for ill and injured persons; administers medicines, ointments, and drugs as instructed by a physician.

Occupational therapist. Teaches handicrafts, such as basketry and rug-making, to disabled patients in hospitals or institutions for the physically or mentally handicapped.

Painter. Performs all classes of painting work such as painting the exterior of houses and other structures.

Plumber's helper. Assists plumber to assemble and install air, gas, water, and sewer pipe line systems, fittings, and fixtures.

Policeman. A member of the uniformed police force whose duty it is to protect the lives and property of citizens by enforcing the law of the land.

Screw machine operator. A turret lathe operator who sets up and operates a manually controlled or automatic screw-making machine.

Secretary. Performs general office work in relieving company officials of minor executive and clerical duties; takes and transcribes dictation; may supervise other clerical workers.

Sewer, hand. Performs hand sewing on hats, knitted garments, and other textile products and performs various finishing operations, using a needle and thread.

Sheet metal worker. Fabricates, assembles, alters, repairs, and installs sheet metal articles and equipment.

Social worker. A person with recognized educational and experience qualifications who is engaged in the various phases of social work.

Solderer. Joins metal parts together by melting and applying low-melting metal alloy or solder.

Telegraph operator. Operates telegraphic equipment for transmitting and receiving signals or messages over long distances.

Telephone operator. Operates a telephone switchboard to relay to different phones messages of callers.

Upholsterer. Installs, arranges, and secures springs, padding, and covering material to frames of chairs, davenport, and other pieces of furniture.

Vulcanizer. Toughens rubber covering of wire or cable by placing wire in an oven; may be employed in tire rebuilding operations.

Supplementary Civilian Jobs

Accounting clerk. Performs the more routine calculating, typing, and posting duties necessary to accounting.

Agricultural aide. Assists professional research workers in carrying out experiments in some branch of agriculture.

Artist. Engages in making a living from his proficiency in painting, sculpture, or illustration.

Beauty operator. Works in a beauty shop.

Beekeeper. Maintains hives of bees for the commercial production of honey; an apiarist.

Billing clerk. Prepares statements, bills, and invoices to be sent to customers.

Billing machine operator. Prepares statements, bills, and invoices on a billing machine.

Biological aide. Assists professional research workers in carrying out biological experiments.

Bookbinder. Performs any or all of the operations in affixing covers to sewn-together signatures to form books or pamphlets.

Bus boy. Maintains a supply of clean dishes in a hotel or restaurant dining room and carries dirty dishes from dining room to kitchen.

Bus driver. Operates a large automobile to transport passengers, according to a definite time schedule.

Calculating machine operator. Operates a machine that automatically performs basic arithmetic computations.

Camp counselor. Supervises the activities of children or adults at a summer camp, overseeing their health, conduct, and recreation.

Canning factory worker. Prepares fruit and vegetables for canning.

Cashier. Takes and pays out money, keeps records, and prepares money for bank deposit.

Chemical secretary. Performs general office work for chemists or chemical firms; must have some knowledge of chemical terms.

Claim clerk. Writes form letters to customers or carriers regarding claims for merchandise lost or damaged; is a correspondence clerk.

Collector. Makes collections from customers.

Comparison shopper. Visits competing stores and obtains information on styles, quality, and prices of competing merchandise.

Compositor. Sets type by hand for the printing of short articles, headings, and other printed matter.

Comptometer operator. Operates a machine called a Comptometer; is a calculating machine operator.

Copy writer. Writes original, descriptive copy to be used in an advertisement.

Cotton chopper. Uses a hoe to clear a row of cotton of weeds and excess cotton plants; is a farm hand.

Cotton picker. Gathers ripe cotton by hand.

Counterman. Serves food from a steam table or counter to patrons of a cafeteria or restaurant.

Court reporter. Records by shorthand or stenotype the testimony, judicial opinions, decisions, and other proceedings in a court of law.

Cowpuncher. Cares for beef cattle on a stock ranch.

Dairy husbandman. Studies the breeding, nutrition, and management of dairy cattle to improve the quality of milk they produce.

Dairymaid. Performs lighter types of routine work on a dairy farm; is a farm hand.

Delivery truck driver. Drives a truck for transporting or delivering merchandise.

Demonstrator. Creates a buying interest on the part of the public by explaining and showing how merchandise works.

Dental technician. Prepares dental plates and bridgework; may also develop X-ray pictures and keep records.

Dressmaker. Makes dresses, cloaks, and other clothes.

Drycleaner. Operates a dry cleaning machine to clean garments and other articles.

Duplicating machine operator. Reproduces duplicate copies of typewritten or handwritten matter on a machine; may be required to cut stencils.

Economic research assistant. Conducts research in various fields of economics under the supervision of an economist.

Editorial worker. Works in the writing department of a publication.

Elevator operator. Transports passengers, materials, and equipment between floors of a building.

Employment clerk. Keeps employment records of employees and employee applicants.

Farm mechanic. Repairs tractors and other farm machinery and constructs and repairs farm structures.

Farm tractor operator. Drives a tractor to tow an agricultural implement; is a farm hand.

Feed packer. Fills sacks or containers with specified amounts of food; is a machine operator.

File clerk. Keeps correspondence, cards, invoices, receipts, and other records systematically arranged in file cabinets.

Floorwalker. Supervises employees in a designated section of the selling floor. Answers inquiries of customers.

Fruit cleaner. Works in a canning factory, emptying fruit onto a conveyor and dusting the fruit.

Fruit gardener. Grows small fruits in gardens or yards.

Fruit packer. Packs fruit into containers.

Fruit sorter. Sorts fruit by hand according to size and quality for packing and shipping.

Game farmer. Breeds, raises, and sells game birds.

Gardener. Keeps flowers, trees, and the premises about a home in a healthy and attractive condition.

General office clerk. Performs routine clerical duties.

Greenhouse worker. Specializes in the planting, cultivating, and pulling of flowers and plants in a nursery or greenhouse.

Hairdresser. Performs any of the tasks connected with the waving or combing of patrons' hair into becoming coiffures.

Hosiery knitter. Operates a machine used in making hosiery.

Instrument repairman. Repairs all types of instruments.

Insurance agent. Sells various types of insurance to clients.

Key-punch operator. Records accounting and statistical data on tabulating cards by punching a series of holes in cards.

Laundress. Washes and irons soiled clothes.

Lifeguard. Patrols beach or swimming pool to prevent accidents, keep order, insure cleanliness, and rescue drowning persons.

Linotype operator. Operates the keyboard of an automatic machine that selects and assembles matrices of letters into lines and casts strips of type from type metal for use in printing.

Lithographer. Produces printed impressions from plates.

Lumberjack. Engages in logging operations in a logging camp.

Manicurist. Cleans, shapes, and polishes fingernails.

Medical secretary. Performs general office work for doctors; must have some knowledge of medical terms.

Messenger. Sorts and delivers letters, packages, documents, and

other items to offices or departments within an establishment or other business concern.

Milker. A farm hand who milks cows.

Milliner assistant. Assists in design and construction of hats.

Mimeograph operator. Uses a stencil type duplicating machine; is a duplicating machine operator.

Musician. Is an instrumentalist, singer, writer or conductor of music.

Nursemaid. Performs the more simple duties concerned with the care of children.

Office boy. Performs a variety of routine, unskilled duties about a business office.

Office machine operator. Operates any office machine.

Paymaster. Makes out and distributes payroll.

Porter. Works in an establishment performing any duties of cleaning the premises, furniture, and equipment.

Poultry farmer. Raises chickens or other fowl for market.

Printer. Performs any and all of the duties concerned with the hand and machine setting of type, the assembling of type and cuts, and related duties prior to actual printing operations.

Proofreader. Reads proof of type to detect and mark for correction any grammatical, typographical, or compositional errors, checking proof against original copy.

Public stenographer. Stenographer who works for a number of clients.

Receiving clerk. Receives goods shipped to a firm, unpacks and verifies correctness of shipments.

Receptionist. Receives clients or customers coming into an establishment, ascertains the individual's wants, and directs him accordingly.

Reporter. Collects news for publication in newspapers and writes news articles.

Sales clerk. Sells a variety of merchandise, completing each sale quickly, and receiving cash payment for articles selected by customers.

Sales correspondent. Composes and writes sales letters to individuals, company customers, and other business establishments in reply to correspondence received.

Salesman. Sells specialized product or service, using sales talk; has considerable knowledge of product or service.

Seamstress. Performs any or all sewing operations to make or repair articles of textile or other fabric.

Sewing machine operator. Performs any or all sewing operations on fabrics or similar materials by use of a sewing machine.

Sheep farmer. Maintains flocks of sheep for meat or wool production.

Sheepherder. Tends a flock of sheep, driving the herd to fresh pastures.

Shipping clerk. Prepares merchandise for shipment; keeps records of shipments made.

Shoemaker. Repairs, resoles, and reheels shoes.

Statistical clerk. Compiles regular and special reports for the use of the management and as a basis for statistical study.

Stenographer. Takes dictation in shorthand and transcribes dictated material on a typewriter.

Stenotype operator. Takes dictation on a machine similar to a typewriter.

Stockroom clerk. Receives, stores, and issues equipment, material, merchandise, or tools in a stockroom or storeroom.

Tabulating machine operator. Operates a machine that automatically analyzes, makes calculations, and translates or divides information represented by holes punched in groups of tabulating cards.

Teacher. Instructs students in an educational institution in any phase of the curriculum for which he or she has prepared carefully through study.

Teller. Receives and pays out money in a bank, keeping record of all transactions.

Ticket agent. Sells tickets for transportation agencies.

Timekeeper. Keeps records of time worked by employees in an establishment.

Traffic clerk. Keeps a record of incoming and outgoing shipments and checks rate charges.

Truck farmer. Grows a variety of vegetables for market.

Typist. Typewrites letters, addresses envelopes, and does miscellaneous typing in an office.

Usher. Escorts patrons to seats at an entertainment or meeting.

Waiter. Sets tables and serves meals.

Window trimmer. Arranges displays of store merchandise in store windows or showcases.

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All the branches of the armed services publish pamphlet material which is available free to students who want to get information about the organization of and jobs within the various branches. To secure such material, write to:

U. S. Department of Navy, 18th St. and Constitution Ave., N.W., Washington, D. C. (for information about the Navy, the Coast Guard, and the Marine Corps.)

U. S. War Department, Constitution Ave. and 20th St., N.W., Washington, D. C. (for information about the Army.)

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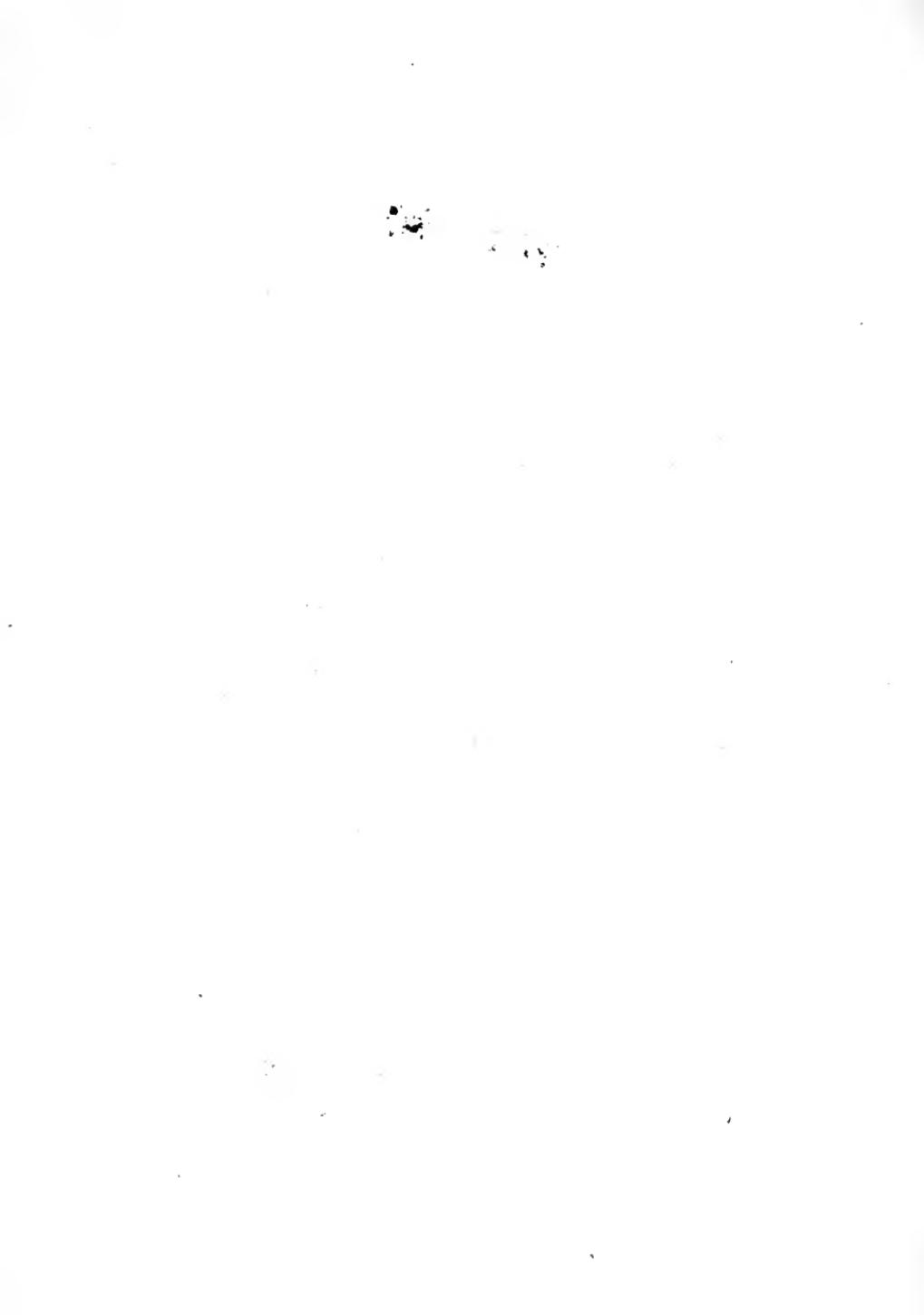
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